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# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JANUARY, 1907.<sup>1</sup>

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Chicken-pox, Sore-head, or Contagious Epithelioma in Poultry. By C. A. Cary. (Bulletin No. 136, pp. 17-56, pls. 3.)

This bulletin discusses the forms and causes of this disease, reports the results of inoculation tests on pigeons and fowls, and gives a list of publications relating to chicken diseases. In an appendix the author gives advice to poultrymen on the sanitary care of poultry yards, and a list of drugs, with directions for their use in the treatment of poultry diseases.

Variety Tests with Cotton and Corn. Williamson Method of Corn Culture. By J. F. Duggar and L. N. Duncan. (Bulletin No. 138, pp. 95-106, figs. 2.)

The results of tests with 32 varieties of cotton in 1905 and with 20 varieties of cotton and 18 varieties of corn in 1906 are reported in this bulletin. Notes are also given on the results in testing the Williamson method of corn culture.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

The Selection of Seed Wheat. By G. W. Shaw. (Bulletin No. 181, pp. 147-172, figs. 12.)

“This bulletin aims merely to present certain ascertained facts with reference to the condition of the seed wheat commonly used by California farmers, and to compare the results with those representing really first-class seed of the respective types.” Notes are also given on the treatment of seed wheat for the prevention of smut.

Defecation of Must for White Wine. By F. T. Bioletti. (Circular No. 22, pp. 4.)

Notes are given in this circular on the methods and advantages of defecation of must with sulphur fumes for the production of the best quality of white wines.

Pure Yeast in Wineries. By F. T. Bioletti. (Circular No. 23, pp. 4.)

This circular is issued with the hope of interesting the more progressive wine makers of the State in the use of pure yeasts in their industry. Notes are given on the advantages of pure yeasts in wine making, and directions are given for their use.

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<sup>1</sup> Hereafter this list is to be issued every month.



CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Report on Commercial Fertilizers, 1906. By E. H. Jenkins, A. L. Winton, et al. (Annual Report, 1906, Part I, pp. 106.)

This report discusses the duties of manufacturers and dealers under the provisions of the State fertilizer law, gives the results of inspection, and reports analyses and valuations of 559 samples of commercial fertilizers and manurial waste products collected in 1906.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Duty of Chemistry to Agriculture. By C. G. Hopkins. (Circular No. 105, pp. 27.)

This circular contains the address of the president of the Association of Official Agricultural Chemists, delivered at the annual convention held at Washington, D. C., November, 1906.

INDIANA STATION, Lafayette, A. Goss, Director.

Steer Feeding. By J. H. Skinner and W. A. Cochel. (Bulletin No. 115, pp. 309-337, figs. 6.)

The main object of the experiment reported in this bulletin, which was conducted during the winter of 1905-6, "was to test the efficiency of various combinations of corn and other feeds for fattening cattle, such as corn stover, oat straw, and clover hay, commonly available on Indiana farms. The comparisons were also planned so as to clearly demonstrate the importance and value of feeding fattening cattle some nitrogenous feed, either in the form of roughage or concentrate, to supplement the corn of the ration."

The Hand Separator and the Gravity Systems of Creaming. By O. F. Hunziker. (Bulletin No. 116, pp. 339-364, figs. 10.)

The purpose of the experiments described in this bulletin is to determine the skimming efficiency of various systems of creaming, to study the effect of these systems on the quality of the cream and skim milk, to determine the influence of many factors on the skimming efficiency of the hand separator, and to point out to Indiana dairymen the methods and conditions of reducing the loss of butter fat in skim milk to the minimum and of improving the quality of the cream.

Hints on Preparing for and Holding Local Corn Shows. By A. T. Wiancko and M. L. Fisher. (Circular No. 1, pp. 13, figs. 2.)

"This circular is prepared with a view to answering the leading questions that come to us concerning the holding of local corn shows, and the selection and preparation of exhibits of corn for show purposes."

The Selection, Preservation, and Preparation of Seed Corn. By A. T. Wiancko and G. I. Christie. (Circular No. 2, pp. 14, figs. 10.)

This circular calls attention to the losses farmers annually sustain by improper attention to the selection and preservation of seed corn and discusses the following topics: When and how to select seed corn, drying and storing seed corn, final selection of seed ears, germination tests and testers, and preparing the seed for planting. Serviceable illustrations accompany the text.

Cornstalk Disease. By R. A. Craig. (Circular No. 3, pp. 10.)

Notes are given in this circular on the prevalence of this disease in Indiana and elsewhere, the effects of outbreaks of the disease in different parts of the State are reported by several veterinarians, the results of tests made by the station in feeding moldy corn to horses and cattle are given, and the causes of cornstalk disease are briefly discussed.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 62.)

This report contains the organization list of the station, a report by the director reviewing the work of the station during the year and giving the text of

the Adams Act, reports by the heads of departments, lists of periodicals on file in the station library and of the bulletins published by the station since its foundation, and a financial statement covering the receipts and expenditures of the Hatch fund to June 30, 1906, and of the State fund to October 31, 1906.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Nodule-disease of the Intestines of Sheep. "Bare-lot" Method of Raising Lambs. By W. H. Dalrymple. (Bulletin No. 89, pp. 11, figs. 5.)

The conclusions drawn from the preceding year's work, which was reported in Bulletin 83 of the station, are given, and the results of further experiments conducted along the same lines in 1906 are reported and compared with the previous results.

MAINE STATION, Orono, C. D. Woods, Director.

Fertilizer Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 133, pp. 177-208.)

"This bulletin contains the analyses of samples collected by the station of the brands of fertilizers licensed in 1906."

Insect Notes for 1906. By Edith M. Patch. (Bulletin No. 134, pp. 209-228, pls. 4.)

"This bulletin contains notes upon the brown-tail moth, Aroostook potato insects, alder blight and attendant insects, the larch case bearer, and brief notes upon the other chief insects of the year."

MARYLAND STATION, College Park, H. J. Patterson, Director.

Results of Experiments on the Liming of Soils. By H. J. Patterson. (Bulletin No. 110, pp. 56.)

In addition to a discussion of the results of experiments conducted during the past six years, this bulletin gives "some general information on liming soils and the analyses of the lime and limestone made at this station. Some of this matter was given in Bulletin No. 66; but as the supply of this bulletin was exhausted several years ago, and the demand for the information still continues, it has been considered advisable to repeat and supplement it at this time."

The Oyster-shell Scale. By T. B. Symons. (Bulletin No. 111, pp. 57-70, figs. 8.)

This bulletin gives notes on the distribution, life history, and habits of this pest, and calls especial attention to the insect's recent attack on sugar maples throughout the State. A detailed account is given of experiments made for the control of this insect.

Treating San José Scale. By T. B. Symons and A. B. Gahan. (Bulletin No. 112, pp. 71-88, figs. 7.)

The information contained in this bulletin is based upon the results of experiments conducted by the station in 1906 in combating the San José scale, upon cooperative experiments with the Bureau of Entomology of this Department, and also upon general observations in Maryland and other States.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 216, pp. 4.)

This is a summary for December, 1906.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Feeding Whole Grain. By R. S. Shaw and H. W. Norton, jr. (Bulletin No. 242, pp. 57-67, figs. 3.)

The purposes of the experiment reported in this bulletin were to determine the percentage of whole grain passing through the digestive tract of cattle fed

grain rations and to determine if the grain had undergone any change in chemical composition by passage through the alimentary tract.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett,  
Director.

The Cost of Producing Farm Products. By W. M. Hays and E. C. Parker. (Bulletin No. 97, pp. 90, pls. 4, figs. 11.)

This is a report of investigations conducted by the station in Minnesota during 1902, 1903, and 1904, in cooperation with the Bureau of Statistics of this Department. Detailed statistics are presented of the cost of production of a number of staple crops under present farm conditions in different parts of the State. Plans of actual farms are presented, together with the same replanned according to scientific farm management, and the advantages of improved methods of farm practice and of cooperation among farmers in increasing the profits of the industry are indicated.

Stable Ventilation, Purpose, Scope, and Need for Such Work. By M. H. Reynolds and C. C. Lipp. (Bulletin No. 98, pp. 85-120, figs. 8.)

This bulletin is presented "as a preliminary study of certain important and perplexing problems in connection with the general subject of stable ventilation," together with a discussion of existing information on the general subject of respiration.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Miscible Oil Sprays. By F. H. Hall et al. (Bulletin No. 281, popular edition, pp. 7.)

An Outbreak of the European Currant Rust. By F. C. Stewart. (Technical Bulletin No. 2, pp. 59-74, pls. 3.)

This bulletin describes the currant fungus (*Cronartium ribicola*), which is common in Europe but hitherto unknown in this country, and gives details of the outbreak of this disease on the station grounds in 1906, with the efforts made to control this disease. An extended bibliography of the subject is appended.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Flax Culture. By H. L. Bolley. (Bulletin No. 71, pp. 137-216, pls. 22.)

This bulletin describes the past and present condition of flax culture in the United States, points out the cause of flax soil sickness, and reports the results of investigations on methods of culture practiced in Holland, Belgium, Germany, Russia, Austria, France, and England, including observations on the characteristics of the crop, existence of flax diseases in the different countries, methods of handling the crop, etc.

Bleaching of Flour. By E. F. Ladd and R. E. Stallings. (Bulletin No. 72, pp. 217-235, fig. 1.)

The results of investigations made under the supervision of the station on commercially bleached flours to determine whether the process in any way injures the quality of the flour, whether nitrous oxid or nitrites are present in bleached flour and remain as constituents of the bread, and whether the process permits of fraud in the handling and sale of flour are reported in this bulletin.

Index for Bulletins 48-68—Volume III—and List of Bulletin Publications. (Index Number, 1906, pp. 13.)

This contains, in addition to an index of topics to Volume 3 of station bulletins, a detailed list of bulletin publications issued by the station, including those now available for distribution.



Report of Food Commissioner. By E. F. Ladd. (Annual Report, 1906, Part II, pp. 164, pls. 4.)

This is the fourth annual report of the food commissioner of the State. The results of the inspection and analysis of food products to December 1, 1906, are reported.

OHIO STATION, Wooster, C. E. Thorne, Director.

Potato Investigations. By W. J. Green and C. W. Waid. (Bulletin No. 174, pp. 249-289, figs. 18.)

The results of tests in 1905 with 150 varieties of potatoes, including notes on the different varieties and on cultural methods, are reported. The early and late blight of potatoes are described, and methods of controlling these diseases are given.

A Visitors' Guide to the More Important Features of the Station's Work in 1906. (Circular No. 56, pp. 14, pls. 2, figs. 9.)

Soil Treatment for the Forcinghouse. The Control of Rosette (*Rhizoctonia*) in Lettuce and Tomatoes and of Nematodes in Crops Grown under Glass. By A. D. Selby. (Circular No. 57, pp. 7, figs. 2.)

The methods employed at the station in treating the greenhouse soils for the control of soil-infesting organisms are reported in this circular.

OREGON STATION, Corvallis, J. Withycombe, Director.

Efficiency of Cream Separators under Farm Conditions. By I. P. Whitney. Dairy School Cream Separator Tests. By F. L. Kent. (Bulletin No. 89, pp. 17, figs. 2.)

This bulletin gives a history of the development of the cream separator, points out the conditions which determine its practical efficiency on the farm, and reports tests of different makes of cream-separator machines.

Acid Soils. By A. L. Knisely. (Bulletin No. 90, pp. 23.)

The replies of 80 farmers residing in various parts of the State who made tests of their soils for acidity in accordance with instructions sent out by the station are tabulated and discussed in this bulletin.

Farm Practice with Forage Crops in Western Oregon and Western Washington. By B. Hunter. (Bulletin No. 91, pp. 40, figs. 4.)

The results of a three years' study on forage-plant investigations and of the experience of a large number of the most successful farmers in the Pacific Northwest are published in this bulletin conjointly by the station and this Department.

The Walnut in Oregon. By C. I. Lewis. (Bulletin No. 92, pp. 43, pls. 23.)

In this bulletin detailed information is given regarding the culture of walnuts, including such topics as propagation, grafting, planting, pruning, harvesting, marketing, varieties, etc. The aim is to furnish directions to those engaged in the industry that will help them to overcome difficulties and improve present practices. Many varieties of walnuts are illustrated.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Analyses of Commercial Fertilizers. By B. L. Hartwell et al. (Bulletin No. 117, pp. 37-52.)

This bulletin contains the analyses of such commercial fertilizers sampled in Rhode Island in 1906 as have not been reported in Bulletin No. 115.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 28.)

This contains a financial statement for the fiscal year ended June 30, 1906, and reports by the director and the heads of departments.

TEXAS STATION, College Station, J. W. Carson, Acting Director.

Feeding Fermented Cotton-seed Meal to Hogs. By F. M. Marshall. (Bulletin No. 78, pp. 20, figs. 8.)

This bulletin gives a summary of investigations made at the agricultural experiment stations in feeding cotton-seed meal to pigs, and reports the results of experiments in feeding fermented cotton-seed meal in accordance with what is known as "the Allison method."

Breeding an Early, Rapid Fruiting, and Productive Cotton. By R. L. Bennett. (Bulletin No. 79, pp. 9, figs. 5.)

The result of the investigations reported in this bulletin, which were made by the Texas Station in cooperation with the Bureau of Plant Industry of this Department, is to inform "the grower how he may, from the native Texas big boll cotton on his own farm, secure an early, good staple cotton that will more successfully escape the boll weevils."

Peach Growing in Texas. By E. J. Kyle. (Bulletin No. 80, pp. 29, figs. 15.)

"The object of this bulletin is to lay before the practical grower the fundamental principles of successful peach culture in this State, the proper observance of which will enable him at least to partially overcome these frequent failures of the peach crop and to better withstand the increased competition."

Alfalfa Seed Testing. By O. M. Ball. (Bulletin No. 81, pp. 15, pl. 1, fig. 1.)

In this bulletin the adulterants and weed seeds found in alfalfa seed are described and illustrated, methods of testing the purity of alfalfa seed are described, and the results of purity and vitality tests made at the station in 1905 are reported.

Maintaining the Fertility of Rice Soils—A Chemical Study. By G. S. Fraps. (Bulletin No. 82, pp. 42, figs. 3, map 1.)

"This bulletin is a study of the plant food in the rice crop, the irrigation waters, and some rice soils, with a view to ascertaining the amount carried in the irrigation waters, the losses of plant food from the soil, the content of the soils in plant food, and their deficiencies in this respect, if any. On the information thus secured, recommendations for maintaining the fertility of rice soils are made."

Nitro-Culture. By O. M. Ball. (Bulletin No. 83, pp. 15.)

Notes are given in this bulletin on the claims made for nitro-cultures, and the results of inoculation experiments on leguminous plants to test the validity of these claims are reported. Tests of various methods of inoculating alfalfa with the root-tubercle organisms of bur clover are also reported.

Tomato Fertilizers at Troupe. By W. S. Hotchkiss and E. C. Green. (Bulletin No. 84, pp. 15, figs. 5.)

The results of fertilizer and variety tests with tomatoes, made at the station in 1904 and 1905, are reported in this bulletin.

Commercial Fertilizers in 1905-6. By G. S. Fraps. (Bulletin No. 85, pp. 20.)

In this bulletin notes are given on the composition, valuation, and application of fertilizers, and the results of analyses of a large number of samples secured in the course of fertilizer inspection during the season of 1905-6 are reported.

Cattle-feeding Experiments. By J. A. Craig and F. R. Marshall. (Bulletin No. 86, pp. 23, figs. 9.)

This bulletin reports the results of cattle-feeding experiments at the station in 1905 and 1906, in which tests were made of molasses for fattening stock, of rough rice as a steer feed, and of the profits from different systems of feeding cattle.

UTAH STATION, Logan, P. A. Yoder, Director.

Fifteenth Annual Report, 1904. (Annual Report, 1904, pp. 26.)

This contains a report by the director reviewing the work of the station during the year, departmental reports, a financial statement to June 30, 1904, and a list of bulletins issued during the year.

Sixteenth Annual Report, 1905. (Annual Report, 1905, pp. xxiv.)

This contains reports by the director and heads of departments, a financial statement to June 30, 1905, and a list of bulletins and circulars issued by the station from its origin, which also indicates those now available for distribution.

VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Feeding Stuffs. By J. L. Hills and C. H. Jones. (Bulletin No. 124, pp. 8.)

This bulletin gives the results of feeding-stuff inspection in Vermont for the spring of 1906, and reports analyses of 229 samples representing 70 brands licensed for sale in the State.

Commercial Feeding Stuffs. By J. L. Hills and C. H. Jones. (Bulletin No. 125, pp. 9-16.)

This bulletin gives the results of feeding-stuff inspection in Vermont, and reports analyses of 125 samples representing 54 brands drawn in the inspection of November, 1906.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Development of Factory Dairying in Wisconsin, with Map Showing Location of Cheese Factories and Creameries. By H. L. Russell and U. S. Baer. (Bulletin No. 140, pp. 18, pl. 1, maps 2.)

In this bulletin "not only are the more important data presented as to the present extent of the factory system, but in order to show the rate of development during the last five years a comparison is made between those data and those obtained in previous studies of a similar character." The map which accompanies the bulletin furnishes the data as to the location and number of cheese factories, creameries, combined factories, skim stations, and condenseries in Wisconsin, and of the amount and value of dairy products produced in 1905.





# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING FEBRUARY, 1907.

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ARKANSAS STATION, Fayetteville, W. G. Vincenheller, Director.

Some Insects of Orchard and Other Fruits. By C. F. Adams. (Bulletin No. 92, pp. 17, figs. 21.)

Notes are given in this bulletin on the more destructive insects prevalent in Arkansas, with directions for their control.

Cattle Tick Eradication in Northwest Arkansas. By W. G. Vincenheller. (Bulletin No. 93, pp. 19–30, maps 3.)

This bulletin reports the work done in 1906, in cooperation with the Bureau of Animal Industry of this Department, for the eradication of cattle ticks in the State, with notes on the factors instrumental in keeping up the infection.

Rice Culture. By R. J. Nelson. (Bulletin No. 94, pp. 31–45.)

In this bulletin the results are given of the experiments in rice culture conducted by the station in 1906, notes are given on the history and food value of rice, and suggestions are made for the culture and harvesting of this crop in Arkansas.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Analyses of Paris Green and Lead Arsenate. By G. E. Colby. Proposed Insecticide Law. By C. W. Woodworth. (Bulletin No. 182, pp. 175–188.)

The text of the law relating to the sale of Paris green as an insecticide is given in this bulletin, together with the results of inspection work during the years 1904–5 and 1905–6. A proposed law to cover the sale of all insecticides in the State is appended.

The California Tussock Moth. By W. H. Volck. (Bulletin No. 183, pp. 189–216, figs. 17.)

This bulletin gives the results of an extended study of the economics of the western tussock moth, including notes on its distribution, food plants, life history and habits, natural enemies, poisoning experiments, the damage caused by the insect, and its control.

DELAWARE STATION, Newark, H. Hayward, Director.

Third Report on Dust and Liquid Spraying. By C. P. Close. (Bulletin No. 76, pp. 19.)

The results of comparative tests in 1906 with insecticides and fungicides on several varieties of apple trees are reported in this bulletin.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Annual Report, 1906. (Annual Report, 1906, pp. lxiv.)

This contains a report by the director reviewing the work of the station during the year and giving a financial statement to June 30, 1906, reports by the heads of departments, lists of periodicals received and publications issued by the station, and a paper on pineapple culture.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Corn Culture. By R. J. Redding and J. M. Kimbrough. (Bulletin No. 74, pp. 193-208.)

The results of variety, fertilizer, and cultural tests with corn at the station in 1906 are reported in this bulletin, with a summary of seventeen years of experiments in corn culture.

Cotton Culture. By R. J. Redding and J. M. Kimbrough. (Bulletin No. 75, pp. 209-240.)

The results of variety, fertilizer, and cultural tests with cotton at the station in 1906 are reported in this bulletin, with a condensed review of the results of cotton culture in the past seventeen years.

INDIANA STATION, Lafayette, A. Goss, Director.

The Experiment Station Building. By A. Goss. (Circular No. 4, pp. 10, figs. 5.)

A description of the condition of the present building of the agricultural experiment station, with illustrations and discussion to show the necessity for a new structure at the present time.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Summary of Horticultural Work at the North Louisiana Experiment Station from 1892 to 1907. By E. J. Watson. (Bulletin No. 90, pp. 47.)

Notes are also given on canning fruits and vegetables.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 217, pp. 4.)

This is a summary for January, 1907.

MAINE STATION, Orono, C. D. Woods, Director.

Food Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 135, pp. 227-250.)

"This bulletin contains the text of the pure-food law enacted in 1905 and the revised standards of purity adopted for Maine."

Food Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 136, pp. 249-284.)

This bulletin contains the report upon samples of baking powders, spices, and vinegars collected by the inspector, with explanatory notes and tabulated analyses.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Insects New or Unusual in Michigan. By R. H. Pettit. (Bulletin No. 244, pp. 85-109, figs. 23.)

This bulletin is written "for the purpose of placing on record certain new insect pests that have appeared in Michigan during the last few years, and of noting recent invasions of old but little known or unusual enemies."

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 93, figs. 92.)

This report contains the usual financial statement for the fiscal year ended June 30, 1906, reports by the director and heads of departments, meteorological observations, and reprints of the regular and special bulletins issued during the year.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Native Forage Plants and Their Chemical Composition. By N. E. Wilson, P. B. Kennedy, et al. (Bulletin No. 62, pp. 41, pls. 12, figs. 9.)

"This bulletin is presented as a preliminary step in finding out the quality of the various forage plants, first by chemical analysis to determine their composition and then by digestion experiments to ascertain their digestibility." Descriptive notes with illustrations are given of many of the plants.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

The Brown-tail Moth and the Gypsy Moth in New Hampshire in 1906. By E. D. Sanderson and L. O. Howard. (Bulletin No. 128, pp. 209-230, figs. 8.)

This bulletin reports the present distribution of the brown-tail and gypsy moths in the State, the efforts made in 1905-6 to stop their spread, and the means that should be employed to control these pests.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses and Valuations of Commercial Fertilizers and Ground Bone. By J. P. Street, V. J. Carberry, and P. E. Brown. (Bulletin No. 198, pp. 30.)

A portion of the results of the fertilizer inspection for 1906 was published in Bulletin 196. The balance of the analyses, together with a discussion of the whole inspection, is presented in this bulletin.

Station Novelties in Truck Crops. Further Distribution of Seeds. By B. D. Halsted. (Bulletin No. 199, pp. 30, pls. 4, figs. 7.)

Notes are given in this bulletin on varieties and crosses of sweet corn, tomatoes, eggplants, winter squash, and Chinese vegetables grown at the station during the past season, as well as the results of the distribution of seeds.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Second Report on the Influence of Fertilizers on the Yield of Timothy Hay. By J. W. Gilmore and C. F. Clark. (Bulletin No. 241, pp. 19, figs. 7.)

The results of fertilizer experiments made in Tompkins County, N. Y., in 1906 with timothy hay grown on Dunkirk clay loam are reported.

Cabbages for Stock Feeding and List of Cooperative Tests for 1907. By S. Fraser. (Bulletin No. 242, pp. 21-43, figs. 8.)

A sketch of methods of growing cabbages for stock is given in this bulletin, together with a schedule of the experiments planned by the station for farmers for the season of 1907.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Fattening Steers on Barley and Rejected Wheat. By J. H. Shepperd and W. B. Richards. (Bulletin No. 73, pp. 237-258, figs. 2.)

The results of feeding trials conducted at the station during the winter of 1904-5 are reported in this bulletin.



Hints to Homesteaders. By L. R. Waldron. (Bulletin No. 74, pp. 261-280.)

This bulletin, which is issued as Dickinson Subexperiment Station Bulletin No. 1, has been written "with a view of aiding somewhat the many settlers engaged in opening up the new lands of North Dakota, particularly in the drier region," where farming conditions are different from those to which they have been accustomed.

OHIO STATION, Wooster, C. E. Thorne, Director.

Fattening Range Lambs. A Comparison of Rations. By B. E. Carmichael. (Bulletin No. 179, pp. 65-88, figs. 4.)

The results of a cooperative experiment between a farmer of Wayne County and the station are reported in this bulletin. The object of the experiment was to test the advisability of feeding to fattening range lambs cotton-seed meal, linseed-oil meal, or a proprietary stock food with corn, alfalfa, and clover.

The Grapeberry Worm. By H. A. Gossard and J. S. Houser. (Circular No. 63, pp. 16, figs. 12.)

This circular gives notes on the life history of the grapeberry worm (*Polychrosis viteana*), the remedies for combating the insect, the results of spraying experiments in two vineyards during the season of 1906, and notes on other methods of protecting the fruit besides spraying.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

The "Williamson Plan" of Corn Culture. By C. L. Newman. (Bulletin No. 124, pp. 20.)

A detailed description is given of this comparatively new method of corn culture, its special features are emphasized and discussed, and its prospective value to the development of southern farming is pointed out in this bulletin.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. 28.)

This contains a financial statement of the station to June 30, 1905, and reports by the director and heads of departments.

TEXAS STATION, College Station, J. W. Carson, Acting Director.

Length of Life of Vines of Various Species and Varieties of Grapes, Profitableness, and by What Diseases Seriously Affected. By T. V. Munson. (Bulletin No. 88, pp. 8, pls. 9.)

A summary of the station's work in grape culture during the past nineteen years.

Insects of the Garden. By A. F. Conradi. The Melon Louse and Other Aphids. By C. E. Sanborn. (Bulletin No. 89, pp. 52, figs. 44.)

Descriptive and remedial notes on the more common garden-insect pests of Texas are given in this bulletin.

The Feed Control in 1905-6. By J. W. Carson and G. S. Fraps. (Bulletin No. 90, pp. 74.)

This bulletin gives the text of the law regulating the sale of mixed feeds in Texas, which went into operation in July, 1905, and reports the work done by the station under the provisions of the law for the season of 1905-6.

Food Adulteration in Texas. By G. S. Fraps. (Bulletin No. 91, pp. 24.)

This bulletin gives summaries of the Federal law relating to food adulteration and of the general food laws of Texas, and reports the examination for adulteration of 201 samples of miscellaneous food products collected in the State during the summer of 1906.



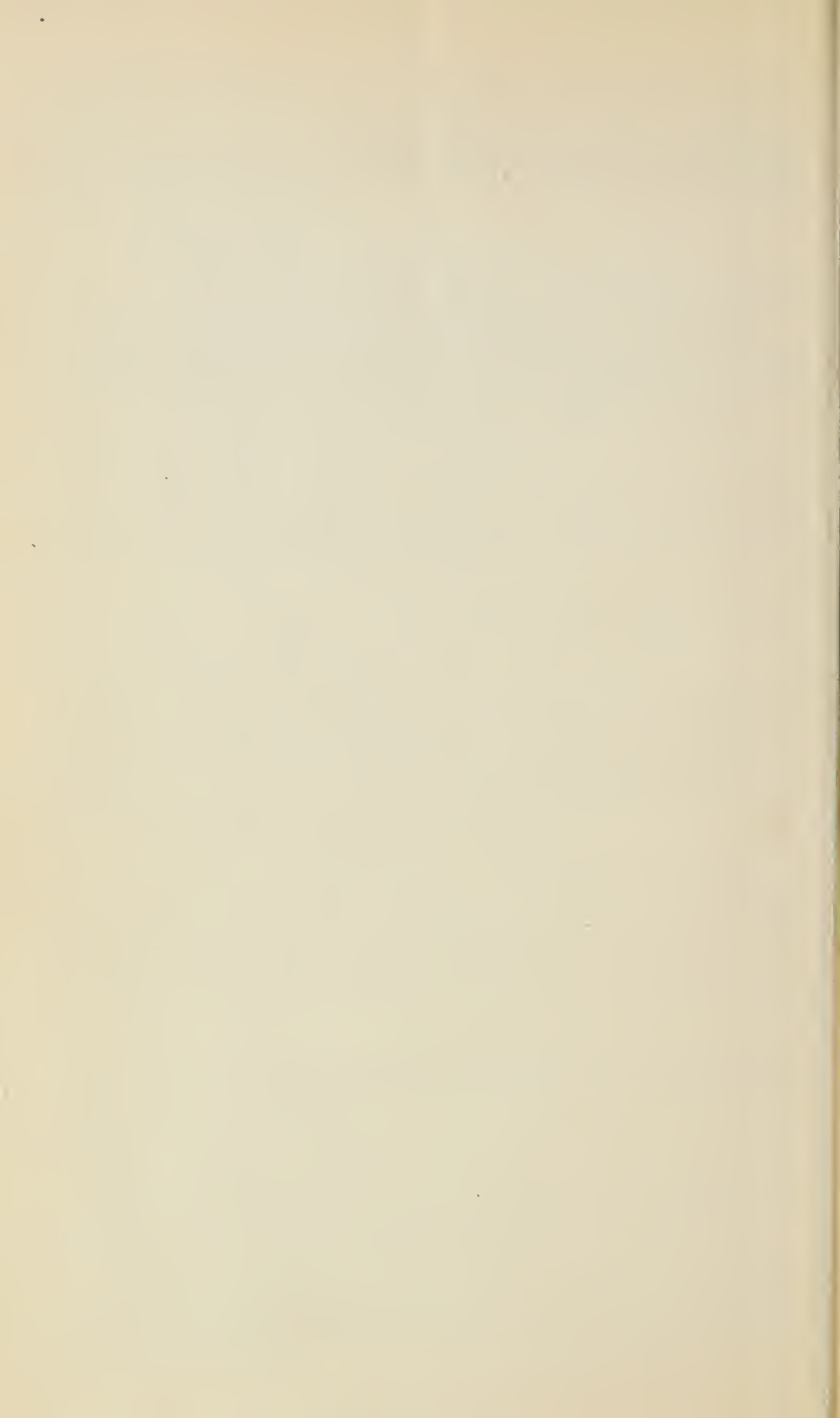
A Test of the Producing Power of Some Texas Seed Corn. By R. L. Bennett. (Bulletin No. 92, pp. 8.)

The results of a test made in 1906 "to determine the relative value in productiveness of corn grown by different persons and of ears grown by the same person" are reported in this bulletin. Notes are also given on growing, selecting, and storing seed corn.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Commercial Fertilizers. Complete Report for 1906. By J. H. Stewart and B. H. Hite. (Bulletin No. 108, pp. 355-448.)

This bulletin contains the results of analyses of fertilizers collected during the year and lists of dealers and brands of fertilizers licensed for sale in the State.



# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MARCH, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 36.)

This contains a financial statement for the fiscal year ended June 30, 1906; a report by the director, which gives a list of publications issued by the station and reviews the work of the station during the year; and reports by the heads of the various departments.

ARKANSAS STATION, Fayetteville, W. G. Vincenheller, Director.

Notes on Spraying and Suggestions for Combating Crop Pests. By E. Walker. (Bulletin No. 95, pp. 45-89.)

In this bulletin are given the results obtained in spraying apples in 1906, together with suggestions and formulas relating to other crops.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

The Colorado Potato Industry. By E. R. Bennett. (Bulletin No. 117, pp. 23, pls. 6.)

This is a preliminary report based on one season's study in 1905, and deals with the economic problems confronting the Colorado grower. Methods of potato culture in different districts, including planting, cultivation, varieties, irrigating, harvesting, storing, marketing, insect enemies and fungous diseases, etc., are discussed.

Western Slope Fruit Investigation, 1906. Report of the Field Horticulturist. By O. B. Whipple. (Bulletin No. 118, pp. 16.)

This bulletin reports the season's investigations on plant diseases, cultivation, watering, pruning, and the collection of data on the fruit industry of Colorado.

Western Slope Fruit Investigation, 1906. Report of the Field Entomologist. By E. P. Taylor. (Bulletin No. 119, pp. 16.)

This bulletin reports the results of cooperative experiments in the control of insects injurious to orchards in the lower Grand Valley in 1906.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Food Products. By A. L. Winton. (Annual Report, 1906, pt. 2, pp. 108-166.)

This report gives the results of inspection work on food products during 1906, including analyses of samples collected by the inspectors, by the dairy commissioner, and sent in to the station by individuals.

Commercial Feeding Stuffs. By E. H. Jenkins and A. L. Winton. (Annual Report, 1906, pt. 3, pp. 167-218.)

This report gives the microscopic and chemical analyses of 237 samples of feeds collected in the course of inspection in the fall of 1906, together with analyses of feeding stuffs sent to the station by individuals.

Sixth Report of the State Entomologist. By W. E. Britton. (Annual Report, 1906, pt. 4, pp. 219-306, pls. 16, figs. 23, map 1.)

In addition to the customary report on the routine work of the State entomologist during the year, this report gives an account of the nursery-inspection work and of the entomological features for 1906.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

The Facility of Digestion of Foods a Factor in Feeding. By C. L. Beach. (Bulletin No. 43, pp. 23.)

The results of experiments to test the effects of digestibility of feeding stuffs on the growth of animals are reported. The tests include exclusive meal feeding to dairy cows, the productive value of nutrients in concentrates and roughage; calf meal as a substitute for milk, and the character of the ration for pigs affecting the gains in live weight.

Poultry Observations. By C. K. Graham. (Bulletin No. 44, pp. 25-35, figs. 3.)

This bulletin gives the results of tests to determine the causes of the sickness and death among incubator chickens and the effects of supplying snow for water on the egg production and the health of fowls.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Salt Sick (Bovine Uncinariasis). By C. F. Dawson. (Bulletin No. 86, pp. 14.)

This bulletin notes the animals susceptible to this disease and discusses, among other topics, its cause, the life history of the worm, the sources of infection, and the symptoms, diagnosis, pathological anatomy, hygiene, and treatment of the disease, the last topic being especially emphasized.

Soil Studies, I. By A. W. Blair. (Bulletin No. 87, pp. 15-46, fig. 1.)

In this bulletin are discussed the chemical and physical properties of soils, the geology of Florida soils, previous work on Florida soils indicating a deficiency of plant food, and the lessons from pineapple fertilizer experiments. Practical remedies, with especial reference to pineapple soils, and chemical and mechanical analyses of Florida soils are appended.

Whitefly Conditions in 1906. The Use of the Fungi. By E. W. Berger. (Bulletin No. 88, pp. 47-85, pls. 3.)

The purpose of this bulletin is to set forth the facts regarding the spread of this pest in Florida and to urge growers of citrus fruits to put forth every effort to control this pest, especially by the introduction of the fungi which are parasitic on the whitefly larvæ and pupæ. Descriptions are given of several parasitic fungi, methods of introduction are suggested, and the life history of the insect is described.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Cottony Maple Scale in Illinois. By S. A. Forbes. (Bulletin No. 112, pp. 341-360, pls. 3, figs. 8.)

The purpose of this bulletin is to give a brief account of the cottony maple scale (*Pulvinaria innumerabilis*), "to review the attempts made to destroy it by means of summer and winter sprays, and to present practical instructions for its mastery where it is still present in destructive or threatening numbers."



Remarkable Difference in Dairy Cows. By W. J. Fraser. (Circular No. 106, pp. 16, figs. 10.)

The milk and butter-fat records of two cows from the station herd, with directions for determining the profitableness or unprofitableness of dairy cows, are reported.

INDIANA STATION, Lafayette, A. Goss, Director.

Results of Cooperative Tests of Varieties of Corn, Wheat, Oats, Soy Beans, and Cowpeas. By A. T. Wiancko. (Bulletin No. 117, pp. 367-394, fig. 1.)

The results for the year 1906 are reported.

Report of Experimental Work on the Randolph County Farm, 1906. By G. I. Christie. (Circular No. 5, pp. 4.)

The results with varieties of corn grown in 1906 are reported in this circular.

IOWA STATION, Ames, C. F. Curtiss, Director.

Investigation of Concentrated Commercial Feed Stuffs as Sold in Iowa. By L. G. Michael. (Bulletin No. 86, pp. 52.)

This bulletin describes the condition of feeding stuffs as sold in Iowa, and the composition of a large number of authenticated samples as determined by analysis at the station is reported and discussed. The composition of a number of home-grown feeds is included.

Condimental Stock Foods and Tonics. By L. G. Michael and H. O. Buckman. (Bulletin No. 87, pp. 28.)

A number of condimental stock foods are described, their composition is given, and the results of tests with animals are reported in this bulletin, together with analyses made by the station of samples collected in Iowa. A tabulated list is given of the drugs used in condimental foods and tonics, including data on their use in medicine, dose, and cost per pound.

The Vitality, Adulteration, and Impurities of Clover, Alfalfa, and Timothy Seed for Sale in Iowa in 1906. By L. H. Pammel, R. E. Buchanan, and Charlotte M. King. (Bulletin No. 88, pp. 69, figs. 10.)

The results of tests conducted at the station in 1906 with a view of raising the standard of seeds offered for sale in Iowa are reported in this bulletin.

Spraying Calendar. By S. A. Beach, E. E. Little, and M. L. Bowman. (Bulletin No. 89, pp. 24, figs. 5.)

"This bulletin gives directions for fighting some of the common insects and diseases which injure orchard and garden crops and also tells how to prevent smut in oats, barley, and wheat."

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Commercial Seeds of Brome Grass and of English and Kentucky Blue Grasses: Adulterants and Substitutes and Their Detection. By H. F. Roberts and G. F. Freeman. (Bulletin No. 141, pp. 69-112, figs. 39.)

A discussion of these topics, the seeds and their adulterants and substitutes being illustrated and described. The purpose of the bulletin is to enable Kansas farmers to distinguish clearly and readily the true seeds from their substitutes.

The Value of Oil in Road Improvement. By A. Dickens. (Bulletin No. 142, pp. 113-124.)

The results of experiments authorized by the Kansas legislature in 1905 for the improvement of roads by means of crude oils are reported in this bulletin.

Disposal of Dairy and Farm Sewage, and Water Supply. By O. Erf.  
(Bulletin No. 143, pp. 125-139, figs. 9.)

The purpose of this bulletin is "to give a few suggestions as to the proper manner of disposing of farm sewage from the cow barn, milk house, dairy, and from the dwelling, or any other place that is closely situated to the dairy plant."

Pure Seed *v.* Poor Seed. By H. F. Roberts and G. F. Freeman.  
(Special Circular, pp. 21.)

The advantages of sowing pure seeds of alfalfa, forage grasses, and clovers, with the disastrous effects of sowing impure seeds, are pointed out in this circular.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Tobacco. By W. H. Scherffius. (Bulletin No. 129, pp. 15, pls. 16.)

The purpose of this bulletin is to outline a simple practical plan by which tobacco growers may begin the improvement of their tobacco crop. The author discusses the selection of seed plants and care of seed, improved methods of handling the crop, and elimination of undesirable varieties.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Tomato Investigations. By T. H. White and W. R. Ballard. (Bulletin No. 113, pp. 89-112.)

In addition to a summary of the work with tomatoes issued in former bulletins of the station, this bulletin gives a report of experiments in testing varieties, and on the culture, training, and spraying of tomatoes from 1897 to 1906, inclusive.

Fertilizer Experiments with Different Sources of Phosphoric Acid. By H. J. Patterson. (Bulletin No. 114, pp. 113-144.)

"The experiments reported upon in this bulletin were inaugurated in 1895. A report of progress on the tests was made in Bulletin No. 68, published in September, 1900. The object of the experiment was to test the availability of different sources and forms of phosphorus and methods of rendering insoluble phosphates available in the soil." The results are given to the close of the season of 1906.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Analyses of Fertilizers. By C. A. Goessmann. (Bulletin No. 113, pp. 30.)

This bulletin gives analyses of manurial substances and licensed fertilizers sent in to the station and collected in the general markets in 1906, together with the trade values of fertilizing ingredients in raw materials and chemicals.

The Oriental Moth, a Recent Importation. By H. T. Fernald. (Bulletin No. 114, pp. 14, pl. 1, map 1.)

This bulletin gives an account of the discovery and identification of the Japanese "Ira-mushi" moth (*Cnidocampa flarescens*) in and around Dorchester, Mass., in 1906. Notes are given on its distribution, food plants, abundance, life history, and economic importance.

Meteorological Observations. By J. E. Ostrander and T. A. Barry.  
(Meteorological Bulletin No. 218, pp. 4.)

This is a summary for February, 1907.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Cull Beans as a Food for Swine. By R. S. Shaw and A. C. Anderson.  
(Bulletin No. 243, pp. 71-81.)

The results of six experiments in feeding cull beans to growing pigs are reported in this bulletin.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

The Dairy Cow. By J. S. Moore. (Bulletin No. 95, pp. 23, figs. 4.)

"The object of this bulletin is to give such information as will enable the farmer to keep only such cows on his farm as will, with proper care and management, prove profitable."

Insects and Diseases Liable to be Introduced into Mississippi. By G. W. Herrick. (Bulletin No. 96, pp. 16, figs. 9.)

"It is the purpose of this bulletin to give information that will enable purchasers of nursery stock to recognize and eliminate infested and diseased trees and plants."

Varieties of Cotton, 1905 and 1906. By W. R. Perkins. (Bulletin No. 98, pp. 7.)

The results of experiments in variety tests for two years are reported in this bulletin.

MISSOURI FRUIT STATION, Mountain Grove, Paul Evans, Director.

Biennial Report, 1905-1906. (Biennial Report, 1905-6, pp. 18, pls. 4.)

This contains reports by the officers of the board of trustees and the manager of the station, a financial statement for the years 1905 and 1906, and lists of varieties of peaches and grapes that fruited in 1906.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

The Cabbage and Onion Maggots. By J. B. Smith and E. L. Dickerson. (Bulletin No. 200, pp. 27, pls. 9, figs. 4.)

Descriptions are given in this bulletin of the cabbage maggot (*Pegomyia brassicae*) and the imported onion maggot (*Pegomyia cepetorum*) as typical forms of root-maggots injuring the onion, cabbage, and cruciferous crops. The results of cooperative experiments under the direction of the station in 1906 and the observations and experiences of the past fifteen years in New Jersey in controlling these pests are also included.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Influence of Mushrooms on the Growth of Some Plants. By G. F. Atkinson. (Bulletin No. 240, pp. 217-234, figs. 11.)

The results of experiments conducted at the station in the winter and spring of 1905-6 are reported in this bulletin.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Quality of Commercial Cultures for Legumes in 1906. By M. J. Prucha and H. A. Harding. (Bulletin No. 282, pp. 271-279.)

A summary of tests in 1905, together with the results of experiments in 1906, are reported.

The Apple and Pear Mites. By P. J. Parrott, H. E. Hodgkiss, and W. J. Schoene. (Bulletin No. 283, pp. 281-318, pls. 10.)

"This bulletin is a preliminary treatise upon the Eriophyidae, a group of plant-inhabiting mites of increasing importance, in which special attention is given to the species thriving upon the apple and the pear. This investigation was undertaken because of the appearance of the leaf blister-mite upon apple foliage and its widespread distribution in destructive numbers in the apple orchards of Ontario, Orleans, Wayne, and Niagara counties." A bibliography is included.

Director's Report for 1906. By W. H. Jordan. (Bulletin No. 284, pp. 329-350.)

This bulletin reviews the changes in the station staff and the work of the station during the year and gives a list of the station's publications in 1906, with summaries of the more important results discussed in the bulletins.



Report of Analyses of Samples of Fertilizers Collected by the Commissioner of Agriculture during 1906. (Bulletin No. 285, pp. 81.)

There are presented in this bulletin the analyses, without comment, of samples of fertilizers collected by the commissioner of agriculture during 1906 and transmitted by him for analysis to the director of the New York Agricultural Experiment Station.

Twenty-fourth Annual Report, 1905. (Annual Report, 1905, pp. 405, pls. 28, map 1.)

This report contains a financial statement for the fiscal year ended September 30, 1905, a report by the director reviewing the work of the station during the year, reprints of a number of bulletins, a list of periodicals received by the station, and meteorological records for 1905.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Seventeenth Annual Report, 1906. (Annual Report, 1906, pp. 90, pls. 4, charts 2.)

This contains the report of the director, which gives a list of bulletins issued and a brief review of the work of the station and substations during the year, reports by the heads of departments containing accounts of experimental work with poultry and on "swamp fever" in horses, a report on the results obtained on the Great Northern and Northern Pacific Demonstration Farms, and a financial statement for the fiscal year ended June 30, 1906.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Strawberry Test Plot. By F. H. Ballou. (Bulletin No. 178, pp. 41-68, figs. 22.)

This bulletin discusses the importance of variety testing and gives notes on the results with new varieties of strawberries grown at the station in 1906.

Dying of Bearing Grapevines. Localized Stem Blight in Ohio Vineyards. By A. D. Selby and J. M. Van Hook. (Circular No. 64, pp. 6, figs. 2.)

This circular gives an account of the origin, symptoms, and appearance of a blight which attacked grapevines in Ohio in 1905 and 1906. Methods for the prevention or control of the disease are suggested.

The Spring Cankerworm. By H. A. Gossard and J. S. Houser. (Circular No. 65, pp. 7, figs. 8.)

This circular describes the spring cankerworm (*Paleacrita vernata*) and gives notes on its habits and means of control.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Preliminary Report on the Water Content, Melting Point, and Keeping Quality of Butter. By J. Michels and F. S. Shiver. (Bulletin No. 125, pp. 14.)

"The investigation reported in this bulletin is the outcome of an attempt to study the influence of different amounts of moisture on the keeping quality of butter."

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Selection for Disease-resistant Clover. By S. M. Bain and S. H. Essary. (Bulletin Vol. XIX, No. 1, pp. 10, figs. 5.)

The results of an experiment in cooperation with the Bureau of Plant Industry of this Department in breeding a clover resistant to disease are reported in this bulletin.



UTAH STATION, Logan, P. A. Yoder, Director.

Report on the Southern Utah Experiment Station. By P. A. Yoder, R. S. Northrop, and J. T. Atkin. (Bulletin No. 97, pp. 24, figs. 8.)

This bulletin contains a review by the director of the work at the station since 1905, the main part being confined to a report by the horticulturist on the results with fruits, nuts, and vegetables in 1906. Notes are also given on the results of experiments on vines resistant to phylloxera.

Report on the Central Utah Experiment Station. By P. A. Yoder et al. (Bulletin No. 98, pp. 27-44.)

In this bulletin reports are made by the director, horticulturist, agronomist, and irrigation engineer on the different lines of station work in 1906.

VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

Annual Report, 1906. (Annual Report, 1906, pp. 60, figs. 7.)

This contains the director's report, which reviews the work of the station during the year, a list of station bulletins available for distribution, a financial statement for the fiscal year ended June 30, 1906, and reports by the heads of the departments. The latter include articles on nitrogen availabilities by modifications of the alkaline permanganate method; stomatitis, or sore mouth; and comparison of concentrates for dairy cows.

WISCONSIN STATION, Madison, W. A. Henry, Director.

Principles and Maintenance of Soil Fertility. By A. R. Whitson and C. W. Stoddart. (Bulletin No. 139, pp. 28, figs. 9.)

"This bulletin is written for the purpose of putting before the farmer a statement of our present knowledge of the factors which influence the fertility of the soil, and of the relation of these factors to each other."

Licensed Commercial Feeding Stuffs, 1906. By F. W. Woll and G. A. Olson. (Bulletin No. 142, pp. 54.)

This bulletin contains a list of licensed manufacturers and dealers of feeding stuffs in Wisconsin during 1906, the results of inspection work for the year, including analyses of 131 samples collected by the station or sent in for examination by the manufacturers, and analyses of unlicensed commercial feeding stuffs and other feeds not subject to license. The text of the Wisconsin feeding-stuff law is also included.

Twenty-third Annual Report, 1906. (Annual Report, 1906, pp. viii+321, figs. 35, pl. 1.)

This report contains a report by the director reviewing the work of the station during the year and giving a list of bulletins issued by the station, lists of exchanges and acknowledgments, a financial statement for the fiscal year ended June 30, 1906, and the following special articles: Whole corn compared with corn meal for fattening pigs, with summary of trials for ten years; soy bean meal *v.* wheat middlings as a supplement to corn meal for growing and fattening pigs; portable hog houses; the production of winter lambs; dried beet pulp for lambs; the university dairy herd, 1905-1906; tuberculosis work for 1905-1906; development of factory dairying in Wisconsin; distribution of lactose-fermenting yeasts in dairy products; a laboratory incubator; relation of soil bacteria to nitrogenous decomposition; cranberry investigations; the nitrogen content of soils as affected by methods of farming; availability of phosphates in relation to soil acidity; field experiments; tobacco investigation; potato spraying experiment; orchard fruits; greenhouse experiments for 1906; horticultural work at northern substations; report of State nursery inspection; experiments with grains and forage plants, 1906; eradication of wild mustard; treating seed grains for the prevention of smut; crop work at the northern substation farms; a comparison of methods for the inoculation of leguminous crops; farm-implement investigation; work of the department of horse breeding; feeding stuff and fertilizer inspection in Wisconsin, 1906.



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING APRIL, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Report of the Plant Pathologist to July 1, 1906. By R. E. Smith. (Bulletin No. 184, pp. 219–258, figs. 12.)

This bulletin reviews the work of the station in combating the following plant diseases: Pear blight, walnut blight, lemon rot, beet blight, peach blight and “shot-hole fungus,” tomato diseases, asparagus rust, rose diseases, etc. A list is given, with explanatory notes, of the plant diseases of the State affecting fruits, vegetables, grains and forage crops, nuts, forest and shade trees, and ornamental shrubs.

Oïdium or Powdery Mildew of the Vine. By F. T. Bioletti. (Bulletin No. 186, pp. 315–352, figs. 17.)

This bulletin describes the life history of this fungus disease and points out the methods of control which have been generally found the best and the least costly.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 109–170.)

This contains the organization list, a report by the director reviewing the work of the station during the year, a financial statement to June 30, 1906, and reports by the heads of departments.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

The Apple Leaf-miner, a New Pest of the Apple. By C. D. Jarvis. (Bulletin No. 45, pp. 37–55, figs. 14.)

Notes are given in this bulletin on the life history, habits, and means of control of the apple leaf-miner (*Tischeria malifoliella*), which is reported as doing serious injury in Vermont in 1906. Numerous references to the literature of the subject and a bibliographical list are included.

Directions for Making the Camembert Type of Cheese. By T. Issajeff. (Bulletin No. 46, pp. 57–75, figs. 9.)

The information given in this bulletin is the result of research work covering a period of more than three years in the manufacture of Camembert cheese by the station in cooperation with the Dairy Division of the Bureau of Animal Industry of this Department.

Eighteenth Annual Report, 1906. (Annual Report, 1906, pp. xxiii + 206, figs. 23.)

This report contains a list of station publications available for distribution, a financial statement for the fiscal year ended June 30, 1906, reports by the director and heads of departments, reprints of Bulletins Nos. 38 to 42, inclusive, and a special article on a classification of dairy bacteria.

DELAWARE STATION, Newark, H. Hayward, Director.

Fifteenth Annual Report, 1903. (Annual Report, 1903, pp. 172, pl. 1, figs. 14, dgm. 1.)

This report contains a financial statement of the station for the fiscal year ended June 30, 1903, reports by the heads of departments, and articles on the corn crop of Delaware and observations on an important group of soil bacteria—organisms related to *Bacillus subtilis*.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Fruit and Orchard Investigations. By J. C. Blair. (Circular No. 107, pp. 58.)

"This circular is issued for the purpose of placing before those interested in the development of Illinois horticulture a list of some of the problems which, at present, seem to demand careful study on the part of expert investigators," and which seem to warrant increased State appropriations for experimental work in horticulture by the University of Illinois.

INDIANA STATION, Lafayette, A. Goss, Director.

How to Control the San José Scale and Other Orchard Pests. By J. Troop and C. G. Woodbury. (Bulletin No. 118, pp. 395-423, figs. 14.)

A description is given in this bulletin of the San José scale, together with directions for making and applying standard sprays for the control of this and other insect pests.

Indiana Plant Diseases in 1906. By F. D. Kern. (Bulletin No. 119, pp. 425-436, fig. 1.)

This bulletin contains information regarding the extent of plant diseases prevalent in the State in 1906 secured through reports from correspondents, letters, and specimens received at the station, and observations of station officials. Notes are also given on the control of plant diseases, cultural methods, and fungicides.

Soy Beans, Cowpeas, and Other Forage Crops. By A. T. Wiancko and M. L. Fisher. (Bulletin No. 120, pp. 437-460, figs. 6.)

In this bulletin historical and cultural notes are given on soy beans, cowpeas, and miscellaneous forage plants, with descriptions and results of a number of varieties of soy beans and cowpeas grown at the station during the four years 1903 to 1906.

The Feeding Stuff Control Law. By A. Goss and W. J. Jones, jr. (Circular No. 6, pp. 10.)

This circular contains the full text of the law regulating the sale and inspection of concentrated commercial feeding stuffs in Indiana, the method of its administration, and the regulations of the State chemist's office as related to the sale of feeding stuffs.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

The Inspection of Seeds Under the Kentucky Pure Seed Law. By H. Garman and Mary L. Didlake. (Bulletin No. 127, pp. 127-169.)

The text of the Kentucky seed law and the results of inspection work in 1904 and 1905 are given in this bulletin.

Sixteenth Annual Report, 1903. (Annual Report, 1903, pp. xiv + 322, pls. 23, figs. 15.)

This report contains a financial statement for the fiscal year ended June 30, 1903, a report by the director reviewing the work of the station during the year, reprints of station Bulletins Nos. 105 to 112, inclusive, the report of the chemical department, which includes data on miscellaneous chemical analyses, and meteorological summaries for the year 1903.



Seventeenth Annual Report, 1904. (Annual Report, 1904, pp. xiv+202, pls. 11, figs. 20.)

This report contains data for the year 1904 similar in scope to the above, with reprints of Bulletins Nos. 113 to 117 of the station.

Eighteenth Annual Report, 1905. (Annual Report, 1905, pp. xvii+246, pls. 20, figs. 6.)

This report contains data for the year 1905 similar in scope to the above, with reprints of Bulletins Nos. 118 to 123 of the station.

#### LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 28.)

This report by the director contains a review of the work during the year of the sugar experiment station, of the State experiment station, and of the North Louisiana experiment station, a financial statement for the fiscal year ended June 30, 1906, and in addition notes are given on the State geological survey; soil survey; analyses of fertilizers, feeding stuffs, and Paris green; the Adams fund; meeting of the American Association of Agricultural Colleges and Experiment Stations; and the experiment station exhibit at the State fair at Shreveport.

#### MAINE STATION, Orono, C. D. Woods, Director.

Seed Inspection. By C. D. Woods and R. L. Hammond. (Bulletin No. 138, pp. 50.)

"This bulletin contains analyses of samples of seeds collected by the station and received from correspondents in 1906."

Orchard Notes, 1906. By W. M. Munson. (Bulletin No. 139, pp. 51-64, figs. 2.)

"This bulletin contains a report of progress upon orchard experiments in Kennebec County, including culture and fertilization, orchard renovation, top-grafting, and cover crops, and notes upon pruning orchards."

Fertilizer Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 140, pp. 65-80.)

"This bulletin contains the analyses of manufacturers' samples of brands of fertilizers licensed before February 10, 1907. Dealers are cautioned to consult with the station before offering brands not given in this bulletin."

The Prevention of Potato Scab. By W. J. Morse. (Bulletin No. 141, pp. 81-92.)

"This bulletin contains an account of the causes of potato scab, how soil may be infected, and how infection may be prevented."

#### MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

The Examination of Cattle and Poultry Foods. By J. B. Lindsey. (Bulletin No. 112, pp. 58.)

The topics discussed in this bulletin are as follows: Standards for cattle and poultry foods, chemical examination of cattle and poultry foods, explanation and discussion of the results, concentrated information for busy farmers, proprietary and home-mixed grain rations, market prices of cattle foods for 1906, and weight versus measure of cattle foods.

Preliminary Report on Cranberry Insects. By H. J. Franklin. (Bulletin No. 115, pp. 15.)

"This bulletin gives brief descriptions and accounts of the habits of some of the more injurious insects attacking the cranberry and makes suggestions as to methods of destroying them."

The San José Scale and Experiments for Its Control. By H. T. Fernald. (Bulletin No. 116, pp. 22, fig. 1.)

In this bulletin are given "an account of the life history of the San José scale, the injuries it causes, treatments for it, experiments for its control, including chemical and practical studies of the lime-sulphur wash, a summary of experimental work in the United States, and full directions for making and applying the lime-sulphur wash."

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 219, pp. 4.)

This is a summary for March, 1907.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Fertilizer Analyses. By A. J. Patten and Dorothea Moxness. (Bulletin No. 239, pp. 15.)

This bulletin gives the results of inspection and analyses of commercial fertilizers on sale in Michigan during the season of 1906.

Roots Supplementary to Silage for Dairy Cows. By R. S. Shaw and H. W. Norton, jr. (Bulletin No. 240, pp. 19-31.)

The object of the experiments reported in this bulletin "was to determine whether the addition of roots to a complete ration containing silage would increase the milk flow profitably or not." Detailed tabulated records are given and discussed.

Poultry Raising. By J. G. Halpin. (Bulletin No. 245, pp. 115-136, figs. 2.)

The aim of this bulletin is to present practical information to beginners in the poultry business relating to the most elementary problems in poultry raising. The topics discussed are the selection of parent stock, incubation, brooding, some diseases of chicks, and handling of young stock. A special article is included on the food, care, and management of pullets during the fall and winter.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett, Director.

The Calculated and Determined Nutrients of Rations, and the Digestibility and Value of Emmer. By J. A. Hummel. The Heat Producing Value of the Crude Fat of Fodders and Grains. By H. Snyder. (Bulletin No. 99, pp. 121-140.)

A discussion of these topics.

The Cabbage Maggot and Other Injurious Insects of 1906. By F. L. Washburn. (Bulletin No. 100, pp. 87, pls. 7, figs. 57.)

This bulletin gives a report of the entomological division of the station, including notes on the injurious insects prevalent during the year.

Forage Crops of High, Medium, and Low Protein Content. By H. Snyder. (Bulletin No. 101, pp. 227-256.)

In this bulletin are discussed "the composition and characteristics of the more common farm crops, as clover, alfalfa, peas, rape, corn fodder, silage, prairie hay, timothy, *Bromus inermis*, and millet. In connection with the composition of some of the crops, the protein content of the seed is considered."

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Report of Work at McNeill Branch Experiment Station for 1905. By E. B. Ferris. (Bulletin No. 94, pp. 29, figs. 8.)

The results secured in the culture of fruits, vegetables, and field crops during the year are reported.

Inspection and Analyses of Commercial Fertilizers on Sale in the State.  
(Bulletin No. 97, pp. 57.)

This bulletin reports the results of fertilizer inspection for the season of 1905-6.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Crop Production in Western Nebraska. By W. P. Snyder. (Bulletin No. 95, pp. 34, figs. 8.)

This bulletin gives a report on dry-land farming at the North Platte Experiment Substation for the years 1904 to 1906, inclusive.

Some Insects Injurious to Wheat During 1905-1906. By L. Bruner and M. H. Swenk. (Bulletin No. 96, pp. 36, pl. 1, figs. 14.)

In this bulletin information is given regarding the history of the Hessian fly (*Mayetiola destructor*), its prevalence and destructiveness in the State in 1905 and 1906, and a detailed description of its life history, with notes on the natural enemies and artificial means of control of this pest. Descriptive notes are also given of the wheat-stem maggot (*Meromyza americana*), frit flies (*Oscinis carbonaria* and *O. soror*), wheat midge (*Contarinia tritici*), wheat straw worms (*Isosoma grande* and *I. tritici*), stalk-borer (*Papaipema nitela*), and wheat plant-louse (*Nectarophora cerealis*).

Potato Experiments. By R. A. Emerson. (Bulletin No. 97, pp. 26.)

The results of the station's experiments during the seasons of 1905 and 1906 in comparing various methods of potato culture, different sizes of seed pieces, quantities and kinds of seed, and other cultural features are reported in this bulletin.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Dry Farming in New Mexico. By J. J. Vernon. (Bulletin No. 61, pp. 54, pls. 30, fig. 1.)

This bulletin describes "dry farming" practices in New Mexico and gives information as to the methods followed by several farmers and the results secured in growing various crops in the Las Vegas district.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Spray Calendar. (Bulletin No. 245, pp. 127-136.)

Notes are given in this bulletin on spraying as an orchard practice. A list of a number of fungus diseases and insect pests injurious to crops, with formulas for the preparation of fungicides and insecticides, is included.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Poplar and Willow Borer. By W. J. Schoene. (Bulletin No. 286, pp. 81-104, pls. 6.)

This bulletin deals with the poplar and willow borer (*Cryptorhynchus lapathi*), an imported beetle, which is causing extensive injuries to nursery stock and basket willows in the State. Notes are given on the economic importance of the insect, its life stages and habits, and means of control.

Cause and Control of Bordeaux Injury. By F. H. Hall and U. P. Hedrick. (Bulletin No. 287, popular edition, pp. 16, figs. 3.)

The effects of Bordeaux mixture on fruit and foliage are discussed, and as a result of tests by the station suggestions are made for reducing the injury to fruit caused by the application of this fungicide.

OHIO STATION, Wooster, C. E. Thorne, Director.

Renewal of Old Orchards. By F. H. Ballou. (Bulletin No. 180, pp. 89-110, figs. 14.)

This bulletin describes and illustrates the plan adopted by the station in



renewing an old apple orchard by means of cutting back or "heading down" the trees, with notes on the applicability of the method to peach and other fruit trees.

**Alfalfa in Ohio.** By C. G. Williams and C. H. Kyle. (Bulletin No. 181, pp. 111-135.)

This bulletin reports the experience of the station with alfalfa for the years 1903 to 1906, inclusive, with a summary of information secured from Ohio farmers by means of a letter of inquiry sent out by the station as to their experience with this crop.

**Corn Breeding and Registration.** By C. G. Williams. (Circular No. 66, pp. 14, charts 6.)

This is a paper read at the meeting of the Ohio Plant Breeders' Association at Columbus, Ohio, in January, 1907, and gives the results of practical work along the line of corn breeding, together with the rules for registration adopted by the association.

**The Value of Individual Records of Dairy Cows.** By B. E. Carmichael. (Circular No. 67, pp. 10, figs. 3.)

The milk and butter-fat records of two cows of the station's dairy herd are presented in this circular for the purpose of illustrating the value of accurate knowledge concerning the performance of each cow in the herd.

**Treatment of Cooperative Forestry Plats.** (Circular No. 68, pp. 4, fig. 1.)

As a result of experimentation this circular gives information as to the best methods of treating young trees when transplanted, including care and cultivation after planting.

**The Use of Manure as a Summer Mulch in Vegetable Forcing Houses.** By W. J. Green and C. W. Waid. (Circular No. 69, pp. 4.)

The results of the station tests for two seasons, together with information from various sources, are embodied in this circular regarding the treatment for soils which are to be used for vegetable forcing.

**PORTO RICO STATION,** Mayaguez, D. W. May, Special Agent in Charge.

**Sixth Annual Report, 1906.** (Annual Report, 1906, pp. 32, pls. 3.)

This contains a report by the special agent in charge, giving a summary of investigations during the year, and reports by the heads of departments.

**SOUTH CAROLINA STATION,** Clemson College, J. N. Harper, Director.

**Analyses of Commercial Fertilizers.** By M. B. Hardin et al. (Bulletin No. 126, pts. 1, 2, and 3, pp. 4 each.)

Tabulated analyses of fertilizers collected in the State during the winter of 1906-7 are published without comment in this bulletin.

**Alfalfa or Lucerne.** By C. L. Newman. (Bulletin No. 127, pp. 16.)

Notes are given in this bulletin on the culture of alfalfa, including such topics as selection and preparation of soil, manuring, sowing, inoculation, cutting and curing alfalfa hay, uses of alfalfa, and value of the hay.

**Stock Feeding.** By J. Michels. (Bulletin No. 128, pp. 24, fig. 1.)

The topics discussed in this bulletin are (1) principles and practice of feeding dairy cattle, with feeding tables; (2) silos and silage; (3) feeding swine.

**Improvement of the Wood-lot.** By H. D. House. (Bulletin No. 129, pp. 14, figs. 2.)

"This bulletin is a preliminary paper by means of which it is hoped to interest the landowners and farmers of western South Carolina in the improvement of the depleted forest conditions of the region."



TEXAS STATION, College Station, J. W. Carson, Acting Director.

The San José Scale. By A. F. Conradi. (Bulletin No. 87, pp. 11, figs. 3.)

The habits and life history of this pest, a review of the work that has been done in Texas, and recommendations as to the means of controlling the scale are reported.

UTAH STATION, Logan, P. A. Yoder, Director.

Report on Irrigation and Drainage Investigations During 1905-1906.

By W. W. McLaughlin. (Bulletin No. 99, pp. 47-126, pls. 2, figs. 8.)

The results of cooperative work between the station and this Office are reported.

VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Fertilizers. By J. L. Hills and C. H. Jones. (Bulletin No. 126, pp. 19-40.)

This bulletin contains analyses of samples of fertilizers representing 57 brands on sale in the State, together with a list of licensed companies, a valuation schedule, and other information relating to the sale of fertilizers in Vermont.

State Nursery for Forest Tree Seedlings. By L. R. Jones. (Bulletin No. 127, pp. 43-52.)

The text of the law establishing a nursery for forest seedlings is given in this bulletin, together with the plans proposed by the station for carrying out its provisions and notes on forestry planting in Vermont.

VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

Stall Feeding versus Grazing. By A. M. Soule and J. R. Fain. (Bulletin No. 164, pp. 51-88, figs. 11.)

The experiments reported in this bulletin were planned to compare the cost of feeding cattle in the stall and on grass, with a view of securing data of value and interest to those engaged in the production of beef.

WYOMING STATION, Laramie, B. C. Buffum, Director.

Some Potato Diseases: Their Cause and Control. By A. Nelson. (Bulletin No. 71, pp. 39, figs. 11.)

The importance of the potato crop to Wyoming is pointed out in this bulletin, the prevalence of diseases affecting the crop in 1906 is noted, and the results of experience in combating these diseases in Wyoming and other States are reported. Descriptions are given of the early blight (*Alternaria solani*), late blight (*Phytophthora infestans*), Rhizoctonia (*Corticium vagum solani*), and potato scab (*Oospora scabies*).

Duty of Water in Irrigation of Field Peas. By H. T. Nowell. (Bulletin No. 72, pp. 16, figs. 3, chart 1.)

The results of irrigation experiments made at the station in 1906 to determine the quantity of water needed by field peas are reported in this bulletin.



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United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

**LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF  
EXPERIMENT STATIONS DURING MAY, 1907.**

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Injurious Insects and Their Control. By W. T. Clarke. (Bulletin No. 139, pp. 20.)

This bulletin calls attention to the injuries to crops caused by insects, describes the different classes of insects, and indicates methods of control.

ALASKA STATION, Sitka, C. C. Georgeson, Special Agent in Charge.

Haymaking at Kenai Experiment Station. By P. H. Ross. (Bulletin No. 3, pp. 13, pl. 1.)

The results of experiments in 1905 and 1906 are reported.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Timely Hints for Farmers. By J. J. Thornber et al. (Bulletin No. 54, pp. 99–131, figs. 6.)

A collection of short popular articles issued separately as press bulletins from September 10, 1905, to June 30, 1906. The subjects discussed are as follows: Some practical suggestions concerning seed testing, making the most of a small water supply, weirs for irrigating streams, observations on millets, and field corn in Arizona.

Seventeenth Annual Report, 1906. (Annual Report, 1906, pp. 127–166, figs. 5.)

This contains a report by the director reviewing the work of the station during the year, a financial statement to June 30, 1906, and reports by the heads of departments.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Report of Progress in Cereal Investigations. By G. W. Shaw. (Bulletin No. 185, pp. 261–312, figs. 4.)

The results of cooperative breeding tests for the improvement of wheat grown under California conditions are reported in this bulletin for the seasons of 1904–5 and 1905–6, with a more detailed account of the work during the latter season.

Commercial Fertilizers. By J. S. Burd. (Bulletin No. 187, pp. 355–382.)

This bulletin gives notes on the importance of fertilizer inspection and the trade values of fertilizers, furnishes a list of registered manufacturers and dealers in the State, and reports the results of analyses of fertilizers inspected from July 1 to December 31, 1906.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

The Elm Leaf Beetle. By W. E. Britton. (Bulletin No. 155, pp. 15, figs. 6.)

The object of this bulletin "is to place in the hands of the people of Connecticut a fairly complete and comprehensive account of the elm leaf beetle with up-to-date remedies and methods of treatment."

Report of the Station Botanist. By G. P. Clinton. (Annual Report, 1906, Part 5, pp. 305-368, pls. 16.)

Notes are given on the fungous diseases that were prevalent in Connecticut during the year, with special articles on experiments to prevent onion brittle, the dry-rot fungus (*Merulius lacrymans*), and the root rot of tobacco (*Thielavia basicola*).

DELAWARE STATION, Newark, H. Hayward, Director.

Some Practical Directions for Making Oil Emulsions. By C. L. Penny. (Circular No. 1, pp. 6.)

Formulas for making and notes on the application of various insecticides and fungicides.

The Strawberry Root Louse—Life History and Remedies. By C. O. Houghton. (Circular No. 2, pp. 4.)

Brief notes on this subject.

Two Common Scale Insects. By C. O. Houghton. (Circular No. 3, pp. 6, fig. 1.)

Descriptive notes on and remedial measures for the control of the oyster-shell scale and the scurfy scale are given in this circular.

IDAHO STATION, Moscow, H. T. French, Director.

Mixed Sprays for Apple Scab and Codling Moth. By L. F. Henderson. (Bulletin No. 55, pp. 27.)

The results of spraying experiments in 1906 for the control of these pests, together with notes on their life history, are reported in this bulletin.

The Rex Spray and Other Lime and Sulphur Compounds. By L. F. Henderson. (Bulletin No. 56, pp. 12.)

Notes are given in this bulletin on experiments for the control of the San José scale, peach curl, pear-leaf blister-mite, and apple aphid in Idaho during 1906.

Insecticides and Fungicides. By L. F. Henderson. (Special Bulletin, pp. 21.)

Notes are given in this special bulletin on the preparation and use of a large number of standard insecticides and fungicides.

Annual Report, 1906. (Annual Report, 1906, pp. 40.)

This contains the station organization, a report by the director, a financial statement to June 30, 1906, and reports by the heads of departments.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Shrinkage of Ear Corn in Cribbs. By A. N. Hume and O. D. Center. (Bulletin No. 113, pp. 359-376.)

In order to intelligently answer the question whether or not it is more profitable to market corn as early as possible after husking time or to hold it for the higher spring prices, a series of experiments was conducted at the station to determine the amount of shrinkage of cribbed corn, the results of which are reported in this bulletin.



Soil Improvement for the Worn Hill Lands of Illinois. By C. G. Hopkins and J. E. Readhimer. (Bulletin No. 115, pp. 429-443.)

The results of investigations, including pot cultures and field experiments, regarding the improvement of worn soils in the hill lands of the seven southernmost counties of Illinois are reported in this bulletin.

IOWA STATION, Ames, C. F. Curtiss, Director.

Evergreens for the Iowa Planter. By A. T. Erwin and H. P. Baker. (Bulletin No. 90, pp. 46, figs. 16.)

Part I of this bulletin discusses tree growing in Iowa, tillable land too valuable for extensive tree planting, transplanting evergreens, and cultivation and pruning. Part II consists of a report on the species planted in the State with regard to hardiness, adaptability to various soils, comparative rate of growth, and general value for forestry and ornamental purposes.

LOUISIANA STATIONS, Audubon Park, New Orleans, W. R. Dodson, Director.

The Chemistry of the Sugar Cane and Its Products in Louisiana. By C. A. Browne, jr., and R. E. Blouin. (Bulletin No. 91, pp. 103, dgm. 1.)

"The data collected in this bulletin represents a summary of the work performed during the past few years in the sugar house and laboratories of the sugar experiment station of the Louisiana State University at Audubon Park, New Orleans."

Experiments in the Late Planting of Cotton to Avoid Boll-weevil Damage during 1906. By C. W. Flynn, jr. (Bulletin No. 92, pp. 8.)

The results of cooperative experiments in two districts between the State Crop Pest Commission and the Bureau of Entomology of this Department are reported in this bulletin.

MAINE STATION, Orono, C. D. Woods, Director.

Circulars, Finances, Meteorology, Index. (Bulletin No. 137, pp. 281-314 + VIII, pls. 6.)

"This bulletin contains circulars published in 1906, the summary of the meteorological observations, the report of the treasurer, and the index for the bulletins issued in 1906."

Feeding Stuff Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 142, pp. 93-114.)

"This bulletin contains the analyses of samples of feeding stuffs received from correspondents and collected by the inspectors in the fall and winter, 1906-7, and a discussion of the results of the inspection."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 220, pp. 4.)

This is a summary for April, 1907.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Spraying. By L. R. Taft. (Special Bulletin No. 37, pp. 32, figs. 10.)

In this bulletin descriptive and historical notes are given on the San José scale, and the results of spraying experiments for its control in 1906, together with the results of spraying potatoes, grapes, and orchard fruits, are reported.

MISSOURI STATION, Columbia, H. J. Waters, Director.

The Fruit-tree Leaf-roller. By J. M. Stedman. (Bulletin No. 71, pp. 21, figs. 14.)

In this bulletin attention is called to the prevalence of this insect and the extent of its ravages in Missouri, and notes are given on its life history and means of control.

Alfalfa Growing in Missouri. By M. F. Miller. (Bulletin No. 72, pp. 52, figs. 6, map 1.)

This bulletin is published with the idea of calling attention to the more important principles underlying the successful culture of alfalfa in Missouri, and investigations of the station regarding the treatment of the soil, time and manner of sowing, methods of curing and handling the hay, and the adaptability of the crop to Missouri conditions are reported.

Cowpeas. By A. E. Grantham. (Bulletin No. 73, pp. 60, figs. 9.)

The purpose of this bulletin is to set forth the advantages to be secured by growing cowpeas and of making known the best methods of handling and utilizing the crop.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Spraying Demonstrations in Nebraska Apple Orchards. By R. A. Emerson. (Bulletin No. 98, pp. 35, figs. 8.)

The purposes of the work reported in this bulletin were "to give a practical demonstration of the value of spraying in the control of apple scab and codling moth, to determine the cost of spraying, and to learn whether it pays to spray apple orchards under the conditions existing in this State."

Twentieth Annual Report, 1906. (Annual Report, 1906, pp. 16.)

This contains the report of the director reviewing the work of the station and giving a list of publications issued during the year, and a financial statement for the fiscal year ended June 30, 1906.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

Inspection of Fertilizers in 1906. By F. W. Morse. (Bulletin No. 130, pp. 8.)

Notes on the results of inspection work, with analyses of the samples drawn in 1906.

NEW MEXICO STATION, Agricultural College, Luther Foster, Director.

Prickly Pear and Other Cacti as Food for Stock. By D. Griffiths and R. F. Hare. (Bulletin No. 60, pp. 134, figs. 12, pl. 1, dgm. 1.)

This bulletin describes and illustrates a large number of prickly pear and other cacti, and gives the results of 187 food analyses and 26 complete ash analyses of samples with a view of determining their food value for live stock.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Root Crops for Stock Feeding. By S. Fraser, J. W. Gilmore, and C. F. Clark. (Bulletin No. 243, pp. 45-76, figs. 17.)

This bulletin deals with the methods of growing mangels, sugar beets, turnips, hybrid turnips, ruta-bagas, kohl-rabi, carrots, and parsnips at the station during the seasons 1904-1906, inclusive. "It is intended to contain such information as may be necessary to guide those who wish to raise any of these crops under New York State conditions."

Culture and Varieties of Roots for Stock Feeding. By S. Fraser, J. W. Gilmore, and C. F. Clark. (Bulletin No. 244, pp. 77-122, figs. 30.)

The best methods of culture of root crops for stock feeding as determined by the experience of the station, together with descriptions of the leading varieties, are reported in this bulletin.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Blister Mite and Its Allies. By F. H. Hall. (Bulletin No. 283, popular edition, pp. 10, figs. 5.)

A popular edition of Bulletin 283 of the station, which discusses a group of plant-inhabiting blister mites, especially those attacking the apple and pear.

An Enemy of Poplars and Willows. By F. H. Hall. (Bulletin No. 286, popular edition, pp. 8, figs. 9.)

A popular edition of Bulletin 286 of the station discussing the imported beetle *Cryptorhynchus lapathi*, which is causing extensive injuries to nursery stock and basket willows in the State.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Cereal Crop Experiments. By J. H. Shepperd and O. O. Churchill. (Bulletin No. 75, pp. 283-336.)

In this bulletin the results of variety tests in 1906 with a number of cereal crops, such as wheat, rye, emmer, oats, barley, flax, etc., are reported.

PENNSYLVANIA STATION, State College, H. P. Armsby, Director.

Relative Values of Feeding Stuffs. By H. P. Armsby. (Bulletin No. 71, revised edition, pp. 16.)

This bulletin contains the corrected results of further experiments, made in cooperation with the Bureau of Animal Industry of this Department, in which the values of certain feeding stuffs for maintenance and for fattening were determined by means of the respiration calorimeter.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 149-431 + VII, pls. 7.)

This contains the report of the director reviewing the work of the station during the year, reports of divisions, a financial statement for the fiscal year ended June 30, 1906, list of exchanges, and a special article on the functions of sodium salts.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Methods of Eradicating Cattle Ticks. By L. A. Klein. (Bulletin No. 130, pp. 17, figs. 3.)

This bulletin outlines the economic reasons for eradicating the cattle tick, and gives an account of the methods of eradication that have been adopted in various States.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

The San José and Other Injurious Scale Insects of Tennessee, with Methods for Their Control. By G. M. Bentley. (Vol. XIX, No. 2, pp. 11-34, figs. 24.)

Descriptive and biological notes on scale insects are given in this bulletin, with notes on the preparation of insecticides and the fumigation of nursery stock.





# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JUNE, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALASKA STATIONS, Sitka, C. C. Georgeson, Special Agent in Charge.

Annual Report, 1906. (Annual Report, 1906, pp. 75, pls. 10.)

This report summarizes the work with fruits, field crops, and live stock at the Sitka, Copper Center, Rampart, and Kenai experiment stations in Alaska in 1906, as well as reports from farmers in different sections of the Territory as to the results of seed distribution, etc. Tabulated data are included of soil temperatures and meteorological observations.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Preliminary Announcement Concerning Instruction in Practical Agriculture upon the University Farm, Davisville, California. By E. J. Wickson. (Circular No. 29, pp. 8.)

A description of the university farm and an outline of short courses are given in this circular.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

Alfalfa, Sugar Beets, and Cantaloupes. By P. K. Blinn. (Bulletin No. 121, pp. 8, figs. 3.)

Notes are given in this bulletin on the results with these crops at the station in 1906.

Fruit Growers' Associations. By W. Paddock. (Bulletin No. 122, pp. 18.)

This bulletin describes the workings of the fruit growers' associations of Colorado with the idea of being helpful to those who may be interested in such organizations for the marketing of agricultural products.

DELAWARE STATION, Newark, H. Hayward, Director.

A Study of Delaware Seed Corn, with Some Suggestions for its Improvement. By H. Hayward and H. S. Jackson. (Bulletin No. 77, pp. 16, pls. 10.)

The topics discussed in this bulletin include the importance of corn breeding, how to breed corn, selecting and storing seed corn, and testing seed corn.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Occurrence and Use of Artesian and Other Underground Water. By E. H. Sellards. (Bulletin No. 89, pp. 85-113, figs. 3.)

This bulletin, which is intended as an introduction on the water supply of Florida, contains a large amount of data collected by the personal observation of the writer and from various sources regarding the extent of the underground water supply of the State and its usefulness for agricultural and other purposes.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Spraying for the Codling Moth. By J. W. Lloyd. (Bulletin No. 114, pp. 375-429, figs. 5, dgm. 1.)

The results of experiments from 1902 to 1906, inclusive, are reported in this bulletin.

Illinois Soils in Relation to Systems of Permanent Agriculture. By C. G. Hopkins. (Circular No. 108, pp. 26.)

This is an address read before the Illinois State Farmers' Institute at Quincy, February 20, 1907, and deals with the problem of maintaining the fertility of the soil.

Improvement of Upland Timber Soils of Illinois. By C. G. Hopkins. (Circular No. 109, pp. 8.)

"The investigations reported in this circular deal with the ordinary gently rolling upland timber soils representing a very common type in northern Illinois," and include experiments in soil improvement by the station covering several years.

Ground Limestone for Acid Soils. By C. G. Hopkins. (Circular No. 110, pp. 19, figs. 5.)

This circular was prepared for the purpose of answering numerous questions in a simple scientific manner regarding the liming of soils, including the time and manner of the application of lime.

INDIANA STATION, Lafayette, A. Goss, Director.

Commercial Fertilizers. By W. J. Jones, jr., and O. C. Haworth. (Bulletin No. 121, pp. 463-538, map 1.)

This bulletin summarizes the work of fertilizer inspection in Indiana for the past few years, with a detailed report of the analyses of samples made in 1906.

Additional Information Concerning the Feeding-stuff Control Law. By A. Goss and W. J. Jones, jr. (Circular No. 7, pp. 14.)

This circular was prepared in answer to numerous requests for additional information concerning the new Indiana feeding-stuff control law, which went into effect April 10, and is supplemental to Circular No. 6, which contains a full text of the law and comments on the administration of the same.

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 29.)

This is a summary of the work and expenditures of the station in its different departments during the year ended June 30, 1906, including that of the Fort Hays Branch Station. The bound volume includes in addition a list of station publications, and reprints of Bulletins 130-139, and Press Bulletins 143-151, inclusive.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Commercial Fertilizers. By M. A. Scovell et al. (Bulletin No. 128, pp. 173-258.)

The results of fertilizer inspection in 1906, together with analyses of 651 samples, are reported in this bulletin.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Control of Insect Pests and Diseases of Maryland Crops. By J. B. S. Norton and T. B. Symons. (Bulletin No. 115, pp. 145-210, figs. 38.)

The purpose of this bulletin is to determine what is the trouble with any particular crop and to discuss some of the means by which losses may be prevented. The principal fungicides and insecticides and the best instruments for applying them are also given, together with the methods of use.

Marketing Fruit and Truck Crops. By W. N. Hutt. (Bulletin No. 116, pp. 211-257, figs. 38.)

A detailed account of proper methods of preparing and marketing fruits and vegetables is given in this bulletin and the financial advantage to the producer of adopting the best methods indicated.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Trade Values and Fertilizer and Soil Analyses. By C. A. Goessmann and H. D. Haskins. (Bulletin No. 117, pp. 22.)

This bulletin discusses the trade value of fertilizer ingredients for 1907, reports analyses of manurial substances and soils forwarded for examination, and gives instructions regarding the sampling of materials to be forwarded to the station for analysis.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 221, pp. 4.)

This is a summary for May, 1907.

The Blossom End Rot of Tomatoes. By Elizabeth H. Smith. (Technical Bulletin No. 3, pp. 19, figs. 6.)

"This bulletin gives the results of investigations pertaining to the cause of the so-called 'blossom end rot' of tomatoes, together with a discussion of results obtained by other investigators."

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Spraying Calendar. By L. R. Taft and C. D. Smith. (Special Bulletin No. 36, folio.)

Formulas for making and the time of application of various insecticides and fungicides are presented in this bulletin.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Farmer's Institute Bulletin, 1906. By E. R. Lloyd. (Bulletin No. 100, pp. 47, figs. 11.)

Addresses and notes presented at the farmers' institute meetings in 1906 are reported in this bulletin. The following topics are discussed: Alfalfa in Mississippi, by B. H. Strong; alfalfa, by R. E. Smith; hairy vetch (*Vicia villosa*), lespedeza, and the velvet bean, by E. R. Lloyd; the value of breeding in cattle, by W. G. Harding; grazing hogs, by E. R. Lloyd; surface draining in the Yazoo-Mississippi valley delta, by J. W. Fox; the possibilities of fruit growing in Mississippi, by E. C. Crampton; commercial fertilizers, by G. H. Alford; farming as a business, by W. B. Mercier; practical application of farmers' institute work, by Clara S. Evarts; and the relation of the railroad to the farmer, by M. V. Richards.



NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Director.

Spraying the Apple Orchard. By E. D. Sanderson, T. J. Headlee, and C. Brooks. (Bulletin No. 131, pp. 11-56, figs. 36.)

This bulletin gives a brief account of the apple industry in New Hampshire, notes on the chief injurious insects, and the results of spraying experiments conducted in 1906.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Concentrated Feeding Stuffs. By J. P. Street, J. W. Kellogg, and V. J. Carberry. (Bulletin No. 201, pp. 46.)

"In this bulletin is presented the result of the station's seventh examination of the concentrated feeding stuffs sold in the State under the law of March 15, 1900."

Forest Trees of New Jersey. By B. D. Halsted. (Bulletin No. 202, pp. 52, figs. 25.)

This bulletin contains a list of trees native to or growing in the wild state in New Jersey, and is presented "with the hope that it will give to the people somewhat of that elemental knowledge so much needed for the prosecution of the work of developing to a profitable issue the forest interests of the State."

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Bordeaux Injury. By U. P. Hedrick. (Bulletin No. 287, pp. 103-189, figs. 6, pls. 2.)

This bulletin reports the results of investigations made by the station in 1906 to determine the cause of Bordeaux injury, the conditions which favor fruit injury by Bordeaux mixture, and the means of preventing such injury. An extended bibliography is appended.

Ringling Herbaceous Plants. By U. P. Hedrick, O. M. Taylor, and R. Wellington. (Bulletin No. 288, pp. 193-209, figs. 4.)

This bulletin gives as the objects of ringling "to cause unproductive plants to set fruit, to increase the size of the fruit and thereby the productiveness of the plant, and to hasten the maturity of the fruit," and the results of experiments with tomatoes and chrysanthemums are reported.

Ringling Detrimental to Tomatoes and Chrysanthemums. By F. H. Hall. (Bulletin No. 288, popular edition, pp. 4, fig. 1.)

A popular edition of the above bulletin.

The Action of Dilute Acids Upon Casein When No Soluble Compounds are Formed. The Hydrolysis of the Sodium Salts of Casein. By L. L. Van Slyke and D. D. Van Slyke. (Technical Bulletin No. 3, pp. 75-162, figs. 17.)

This bulletin gives the results of investigations to measure more accurately the amount of acid that combines with casein to form a definite compound insoluble in water, together with a discussion of the hydrolysis of the sodium salts of casein. Chief attention is given to the question as to whether the acid combination with casein is a real chemical combination or not.

Some of the First Chemical Changes in Cheddar Cheese, and The Acidity of the Water-extract of Cheddar Cheese. By L. L. Van Slyke and A. W. Bosworth. (Technical Bulletin No. 4, pp. 22.)

The purpose of this bulletin is to give the results of investigations to determine the changes which take place in the proteids of cheddar cheese while in press, the calcium and phosphoric-acid compounds of cheese, and what constituents of the water-extract of cheddar cheese cause it to neutralize alkali.



## OHIO STATION, Wooster, C. E. Thorne, Director.

The Paraffined Wire-basket Method of Soil Investigation of the Bureau of Soils, United States Department of Agriculture. By C. E. Thorne. (Circular No. 70, pp. 7.)

The attitude of the Ohio Experiment Station toward conclusions drawn by the Bureau of Soils from cooperative work with the station is given in this circular.

## OREGON STATION, Corvallis, J. Withycombe, Director.

Orchard Management. By C. I. Lewis and W. H. Wicks. (Bulletin No. 93, pp. 47, figs. 28.)

This bulletin explains the management of important orchard fruits, discussing in detail location and site, soils, drainage, cultivation, cover crops, fertilization, irrigation, propagation, varieties, care of trees, and renovation of neglected orchards.

The Apple from Orchard to Market. By C. I. Lewis. (Bulletin No. 94, pp. 48, figs. 34.)

Directions are given in this bulletin for picking, packing, storing, and marketing apples with a view of improving the packs in Oregon. A series of appendices give advice to growers and packers, articles of incorporation and by-laws of the Hood River Fruit Growers' Union, and extracts of the Canadian Fruit Marks Act of 1901.

Seventeenth Annual Report, 1905. (Annual Report, 1905, pp. 49-80.)

Summaries by the director and heads of departments of the work of the station during the year.

Eighteenth Annual Report, 1906. (Annual Report, 1906, pp. 20.)

This contains a list of station officers, a financial statement, and a summary of the work of the station for the year ended June 30, 1906.

## SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

The Feeding Value of Speltz in Beef and Pork Production. By J. W. Wilson and H. G. Skinner. (Bulletin No. 100, pp. 116-129, fig. 1.)

In the experiments reported in this bulletin the following subjects are discussed: "(1) The value of speltz, both whole and ground, for steers as compared to whole corn; (2) the value of speltz, both whole and ground, for the production of pork; (3) the comparative value of speltz and corn for hogs when following steers fed on these grains."

Forage Plants at the Highmore Substation for 1906. By W. A. Wheeler and S. Balz. (Bulletin No. 101, pp. 130-153, figs. 6.)

The results with alfalfa, millet, sorghum, and corn are reported.

## WISCONSIN STATION, Madison, H. L. Russell, Director.

The Spread of Tuberculosis through Factory Skim Milk, with Suggestions as to Its Control. By H. L. Russell. (Bulletin No. 143, pp. 28, chart 1.)

A discussion of this subject.

Official Tests of Dairy Cows, 1905-6. By F. W. Woll and R. T. Harris. (Bulletin No. 144, pp. 65, figs. 20.)

A report of the work for the year. The results of official dairy tests (of 7 or 30 days' duration) are reported to October 1, 1906, and semiofficial yearly tests to December 1, 1906.

Relative Value of Shelled Corn and Corn Meal for Fattening Pigs. By W. A. Henry and D. H. Otis. (Bulletin No. 145, pp. 16, fig. 1.)

This bulletin gives the results of the experiments in 1906, together with a

summary of the results secured and the conclusions reached from feeding trials with pigs during the past ten years.

Drainage Conditions of Wisconsin. By A. R. Whitson and E. R. Jones. (Bulletin No. 146, pp. 47, figs. 15, map 1.)

The practicability of draining the marsh and clay soils of Wisconsin is discussed, and the results of pot and field work showing the fertility of such soils and the profitableness of the work are reported.

Report on the Northern Substations for 1906. By E. J. Delwiche. (Bulletin No. 147, pp. 48, figs. 7, dgms. 2.)

This bulletin is a detailed report on the first season's experiments at the northern substations, including agronomy, horticulture, and treatment of soils.

The Pasteurization and the Inspection of Creamery and Cheese Factory By-products. By E. H. Farrington and E. G. Hastings. (Bulletin No. 148, pp. 17, figs. 4.)

The methods and apparatus employed in this work are described and illustrated in this bulletin.

Licensed Commercial Fertilizers and Feeding Stuffs, 1907. By F. W. Woll and G. A. Olson. (Bulletin No. 149, pp. 32.)

The first part of this bulletin gives the results of analyses of commercial fertilizers licensed for sale in the State during 1907, and the second part gives a list of feeding stuffs for which licenses have been taken out by the manufacturers or agents up to April 1, 1907. The texts of the fertilizer and feeding-stuff laws are included.

Sugar-beet Experiments During 1906. By F. W. Woll and C. W. Stoddart. (Bulletin No. 150, pp. 45, figs. 5.)

The purposes of the experiments reported in this bulletin were to study the adaptability of types of soils to sugar-beet culture and the system of fertilization that would produce the best results for factory purposes considering both the yield and quality of beets.

# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JULY, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Acting Director.

Suggestions Regarding the Examination of Lands. By E. W. Hilgard. (Circular No. 25, pp. 7.)

Notes on the importance of examining subsoils and directions for taking soil samples for analysis are given in this circular.

Selection and Preparation of Vine Cuttings. By F. T. Bioletti. (Circular No. 26, pp. 7.)

Notes are given in this circular on the methods of selecting grape cuttings and their care before planting. A definition of good vine cuttings is appended.

Marly Subsoils and the Chlorosis or Yellowing of Citrus Trees. By E. W. Hilgard. (Circular No. 27, pp. 4.)

This circular calls attention to the effects of marl or lime in subsoils on the growth of certain trees and emphasizes the need of subsoil examination as a means of determining what trees or plants are best adapted to any particular region.

A Preliminary Progress Report of Cereal Investigations, 1905-7. By G. W. Shaw. (Circular No. 28, pp. 4.)

The text of the law appropriating money for the improvement of the cereal crops of California is reported in this circular and notes are given on the progress made in the investigations.

INDIANA STATION, Lafayette, A. Goss, Director.

Alfalfa in Indiana. By A. T. Wiancko. (Bulletin No. 122, pp. 139-154.)

Part 1 of this bulletin gives the results of experiments in late summer seedling, and part 2 suggestions for beginners in alfalfa culture.

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Small Grain Crops. By A. M. Ten Eyck and V. M. Shoesmith. (Bulletin No. 144, pp. 139-193, figs. 5.)

This bulletin gives the results of culture and variety tests with cereal crops in 1904, 1905, and 1906, and when similar tests were made in 1903, the average yields for the four years are given. A summary of the weather, crop, and soil conditions is included.

Spraying. By A. Dickens and R. E. Eastman. (Bulletin No. 145, pp. 193-216, figs. 6.)

This bulletin describes the various materials and machinery used in the preparation and application of fungicides and insecticides, and gives the results of spraying experiments in 1906. A spray calendar for various fruits and vegetables is appended.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

The Effects on the Human System of Louisiana Manufactured Sirups and Molasses. By R. E. Blouin, P. E. Archinard, and J. A. Hall, Jr. (Bulletin No. 94, pp. 46.)

Notes are given in this bulletin on the history and development of the Louisiana sugar industry, together with the results of experiments to observe the effects on human subjects of feeding sirups and molasses of high sulphite content.

Anthrax or Charbon. By W. H. Dalrymple. (Circular, pp. 4, figs. 2.)

Notes are given in this circular on the distribution, cause, transmission, symptoms, diagnosis, and treatment of this disease.

MAINE STATION, Orono, C. D. Woods, Director.

Preliminary Notes on the Seedling Apples of Maine. By W. M. Munson. (Bulletin No. 143, pp. 111-140, pls. 8.)

"This bulletin contains a history and description of the more important of the seedling apples originating in Maine."

Poultry Experiments. By G. M. Gowell. (Bulletin No. 144, pp. 141-186, pls. 6.)

"This bulletin contains an account of the brooder houses, houses for hens, and the methods of feeding used at the station; the Maine Station trap nest; and a feeding experiment with whole *v.* cracked corn."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 222, pp. 4.)

This is a summary for June, 1907.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 218, pls. 3.)

This contains a report by the director which gives notes on matters pertaining to the work and progress of the station, a financial statement, and reports by the heads of departments which include articles on the following subjects: Summaries of experiments with manures and fertilizers; soil tests; variety test with potatoes; poultry experiments; report of inspection work with fertilizers and feeding stuffs; experiments in animal nutrition; plant diseases in 1906; the lime and sulphur mixture as a fungicide; potato spraying experiments; copper sulphate treatment of stagnant water; banding substances for trees; effects of escaping illuminating gas on trees; germination and growth in soils of different texture; texture of Massachusetts soils; insects of the year; and notes on mushroom culture.

MINNESOTA STATION, St. Anthony Park, St. Paul, W. M. Liggett, Director.

Fourteenth Annual Report, 1906. (Annual Report, 1906, pp. 361, pls. 2, figs. 108.)

This contains a report by the director summarizing the work of the station and giving a financial statement for the year, and reprints of Bulletins 93-96, inclusive.



MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Fertilizers. By E. B. Ferris. (Bulletin No. 99, pp. 16, figs. 3.)

The results of fertilizer tests with various crops at the McNeill Branch Experiment Station during a period of five years are reported in this bulletin.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Dry Farming in Montana. By F. B. Linfield and A. Atkinson. (Bulletin No. 63, pp. 32, pls. 9, charts 2.)

The first part of this bulletin by F. B. Linfield points out the amount of land in Montana adapted to farming without irrigation and the significance of this method to the future of the cattle industry of the State. Part 2, by A. Atkinson, discusses the principles and practices of dry farming and illustrates the results already accomplished in Montana with certain crops.

Fourth Annual Report of the State Entomologist of Montana. By R. A. Cooley. (Bulletin No. 64, pp. 33-45.)

This bulletin summarizes the expenditures and work of the State entomologist during the year 1906. Notes are given on the more important injurious insects prevalent during the season.

Seepage and Drainage. By E. T. Tannatt and A. P. Anderson. (Bulletin No. 65, pp. 49-63, pls. 4.)

This bulletin is a preliminary report upon certain seepage and drainage problems now in progress by the station.

An Orchard Study of the Bitter Root Valley. By R. W. Fisher. (Bulletin No. 66, pp. 65-97, pls. 9, figs. 6.)

The object of the survey reported in this bulletin was to gather data in regard to all questions relating to the production and marketing of apples in the Bitter Root Valley with a view of learning the best methods of orchard management, the varieties best adapted to the State, and how to secure the largest returns to fruit growers. Notes are given on the apple industry of the United States and Montana, and on varieties, grafting, soil management, methods of culture, etc.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Growing Hogs in Western Nebraska. By W. P. Snyder. (Bulletin No. 99, pp. 32, figs. 10.)

In this bulletin, which is issued as Substation Bulletin No. 2, detailed reports are made of eleven experiments in feeding pigs, the purpose being "mainly to determine the most profitable method of producing pork with the use of alfalfa, and testing the feeding value of grains commonly grown in the country."

NEW HAMPSHIRE STATION, Durham, E. D. Sanderson, Director.

A Plan for Improving the Quality of Milk and Cream Furnished to New Hampshire Creameries. By I. C. Weld. (Bulletin No. 132, pp. 57-67, figs. 6.)

The plan adopted for scoring milk and cream at the station is given and recommended to New Hampshire creameries as a means of bringing about an improvement in the conditions under which the milk and cream in the State are produced.

Seventeenth and Eighteenth Annual Reports, 1905 and 1906. (Bulletin No. 129, pp. 231-277, figs. 3.)

This contains statements of the receipts and expenditures of the station, and reports by the director and heads of departments, reviewing the work along various lines during 1905 and 1906.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Some Household Pests. By J. B. Smith. (Bulletin No. 203, pp. 48, figs. 31.)

This bulletin gives a brief account of the common household pests of New Jersey, including roaches, "croton bugs," ants, carpet beetles, moths, bedbugs, fleas, lice, flies, meal worms, larder beetles and skippers, drug and cigar beetles, termites or white ants, powder-post beetles, centipedes, fish moth or silverfish, and book lice. Remedial measures for the eradication of these pests are given, together with general notes on sulphur and hydrocyanic-gas fumigations.

Home-Grown Protein *v.* Purchased Protein. Distillers' Grains *v.* Gluten Feed. Summer Silage *v.* Soiling. By G. A. Billings. (Bulletin No. 204, pp. 28.)

The results of feeding experiments with cows to compare the effects of different feeds on the yield, composition, and cost of milk and butter are reported in this bulletin.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Effect of Wood Ashes and Acid Phosphate on the Yield and Color of Apples. By U. P. Hedrick. (Bulletin No. 289, pp. 209-235, fig. 1.)

The results of experiments conducted by the station during the past twelve years on the culture of apple orchards are reported in this bulletin. A plan for a fertilizer experiment, whereby one may determine in some measure the fertilizer needs of an orchard, is appended.

Unprofitable Orchard Fertilizing. By F. H. Hall. (Bulletin No. 289, popular edition, pp. 8, fig. 1.)

A popular edition of the above bulletin.

Chemical Studies of Camembert Cheese. By A. W. Bosworth. (Technical Bulletin No. 5, pp. 21-39.)

The aim of this bulletin is to set forth a clear idea of the nature of the fundamental chemical changes which take place in the making of Camembert cheese.

NORTH CAROLINA STATION, Raleigh, B. W. Kilgore, Director.

Twenty-eighth Annual Report, 1905. (Annual Report, 1905, pp. 48, figs. 11.)

This report contains the usual administrative reports by the director and heads of departments, a financial statement for the year, and reprints of Bulletins 190-192, inclusive, of the station.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Agricultural Laws. By E. F. Ladd. (Special Bulletin No. 5, pp. 12.)

This bulletin gives the texts of the feeding stuffs, formaldehyde, Paris green, and fertilizer laws of the State.

Food and Drug Laws. By E. F. Ladd. (Special Bulletin No. 6, pp. 20.)

This bulletin gives the texts of the amended and reenacted pure food and pure drugs laws, the text of the paint law of the State, and hints, rulings, and discussions relating thereto.

OKLAHOMA STATION, Stillwater, W. L. English, Director.

Hardy Trees, Shrubs, and Vines Suitable for Planting in Oklahoma. By O. M. Morris. (Bulletin No. 73, pp. 6.)

This bulletin is a brief report on variety testing of trees and shrubs desirable for planting for timber, home adornment, and ornamentation of public parks,

and is compiled as a result of tests made by the station, of plantings on the college grounds, and of observations made in various parts of the State.

Cowpeas and Soy Beans. By L. A. Moorhouse. (Bulletin No. 74, pp. 22, figs. 5.)

General suggestions concerning the culture and uses of cowpeas and soy beans and their adaptability to Oklahoma conditions are presented in this bulletin.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Continued Test of Nine Different Phosphates upon Limed and Unlimed Land with Several Varieties of Plants. By H. J. Wheeler and G. E. Adams. (Bulletin No. 118, pp. 53-86.)

A detailed report of this work, in continuation of that previously reported in Bulletins 58 and 114 of the station, is given in this bulletin for the years 1903 and 1904.

Analyses of Commercial Feeding Stuffs. By H. J. Wheeler et al. (Bulletin No. 119, pp. 87-107.)

In this bulletin are reported the analyses of such commercial feeding stuffs as have been on sale in the State during the autumn of 1906 and the winter and early spring of 1907.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Evergreens for South Dakota. By N. E. Hansen. (Bulletin No. 102, pp. 154-217, figs. 26.)

"This bulletin is a summary of the experiments with evergreens at this station the past nineteen years, together with the experience of planters in other parts of the State. The object of this is to enable beginners to profit by the experience of others who have made an effort to beautify their home surroundings by planting evergreens on the lawn for ornament, or to secure protection from surface windsweep by planting windbreaks."

UTAH STATION, Logan, E. D. Ball, Director.

Feeding Experiments with Cattle, Sheep, Swine, and Horses. By R. W. Clark. (Bulletin No. 101, pp. 155-201, fig. 1, dgms. 2.)

In part 1 of this bulletin are discussed: Feeding sugar beets and sugar-beet pulp to dairy cows, sheep, and steers; feeding sugar beets, sugar-beet pulp, and beet molasses to swine; feeding sugar-beet pulp to horses; and the effect of beet pulp on strength of bone. In part 2 are discussed: Feeding different amounts of grain to dairy cows; apples as a food for swine; grazing experiments with swine; cost of growing swine; cost of raising cattle to two years of age, and profit in running sheep on inclosed farm.

Poultry Experiments. By J. Dryden. (Bulletin No. 102, pp. 195-237, figs. 8.)

This bulletin contains reports of experiments on: (1) Housing as it affects the fertility of eggs, the egg yield, and the size of eggs; and (2) artificial incubation. Under the latter head is discussed the effect of supplied moisture and carbon dioxid as a factor in incubation.

VERMONT STATION, Burlington, J. L. Hills, Director.

The Testing of Cows. By J. L. Hills. (Bulletin No. 128, pp. 53-88.)

The suggestions made in this bulletin regarding the weighing and testing of milk, with other hints as to the advisability of testing dairy cows, are the outcome of a careful survey of nearly 700 yearly records and of over 400 lactations of the cows in the station herd. The data were gathered between 1892 and 1906.



Abstract of Nineteenth Annual Report, 1905-6. By L. R. Jones et al. (Bulletin No. 129, pp. 89-153, pl. 1.)

In this bulletin the following topics are considered: The occurrence of plant diseases in Vermont in 1906; the leaf-blotch disease of the potato caused by *Cercospora concors*; the blackleg disease of the potato; potato spraying experiments; alfalfa culture in Grand Isle County; the use of anesthetics in the forcing of plants; early spring applications of insecticides for the oyster-shell scale; the occurrence and distribution of San José scale in Vermont; the creamery inspection law; miscellaneous analyses; feeding trials with cows; the effect of freezing milk on creaming and churning and upon the quality of the butter; the effect of age on the yield and quality of milk; record of the station herd for 1905-6.

Nineteenth Annual Report, 1906. (Annual Report, 1906, pp. 205-388, pls. 2, figs. 5.)

This contains a financial statement, a report by the director giving a list of publications with abstracts issued during the year, a list of those available for distribution, and notes on various topics relating to the work of the station, and a more detailed discussion of the articles noted in Bulletin 129 of the station (see above).

VIRGINIA STATION, Blacksburg, A. M. Soule, Director.

The Improvement of Corn. By A. M. Soule and O. Vannater. (Bulletin No. 165, pp. 89-185, figs. 49, charts 6.)

This bulletin describes in detail the results of variety and improvement experiments with corn during 1905 and 1906.

WYOMING STATION, Laramie, B. C. Buffum, Director.

Ration Experiments with Lambs, 1905-6. By G. E. Morton. (Bulletin No. 73, pp. 18, pls. 6.)

The following topics are discussed in this bulletin: (1) The comparative feeding values of various grains fed with native hay; (2) the value of field peas grazed off; and (3) the comparative feeding value of native hay and alfalfa when fed with corn.

Sixteenth Annual Report, 1906. (Annual Report, 1906, pp. 158.)

This contains a report by the director reviewing the work of the station during the year, a financial statement, and reports by the heads of departments, which include articles on the following topics: Summary of lamb feeding, 1905-6; forage plant investigations; digestion experiments with wethers; and alkali studies. An appendix contains a classification of agricultural literature, compiled by G. E. Morton, and designed primarily for the use of "animal husbandmen in indexing card catalogues of information, clipping files, and private libraries."



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

U. S. Department of Agriculture

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING AUGUST, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Descriptions and Classification of Varieties of American Upland Cotton.

By J. F. Duggar. (Bulletin No. 140, pp. 21-142, pls. 36, figs. 35.)

This bulletin "includes investigation of varieties made at Auburn, Ala., in 1899, 1902, 1903, 1904, 1905, and 1906. During each of those years collections numbering 60 to 100 so-called varieties were grown, so that the data here published usually represent the average results of tests of the same variety extending through several years."

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Cotton-Seed Meal as a Fertilizer. By E. H. Jenkins and J. P. Street. (Bulletin No. 156, pp. 7.)

This bulletin discusses the color and price of cotton-seed meal, guaranties, the phosphoric acid and potash in meal, law regarding brand and guaranty of meal, and rebates.

Report of Forester and Conclusion. By A. F. Hawes et al. (Annual Report, 1906, pt. 6, pp. 369-423+XX.)

This contains a report by A. F. Hawes, of the station forestry work in 1906, which includes notes on forest plantings, fire protection, forest nurseries, assistance to private owners, working plans, information on the State forests, etc. Articles are also included on the following topics: Tests of the vitality of vegetable seeds, by E. H. Jenkins, and tests of thoroughbred Guernsey cows for advanced registry. An index of the whole report is included.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Finishing Hogs for Market. By C. L. Willoughby and P. N. Flint. (Circular No. 61, pp. 8, figs 2.)

In this circular, which is numbered consecutively from the press bulletins previously issued from 1 to 60, are given the results of feeding experiments with pigs, the purposes of which were to ascertain a method of feeding that will produce a good proportion of lean meat with a minimum of fat and to stimulate the interest of producers in Georgia to the financial advantages of producing this quality of pork.

HAWAII STATION, Honolulu, J. G. Smith, Special Agent in Charge.

Marketing Hawaiian Fruits. By J. E. Higgins. (Bulletin No. 14, pp. 44, pls. 8.)

The plan and results of shipping under the supervision of the horticulturist of the station a number of subtropical fruits, including pineapples, avocados or "alligator pears," papaias, bananas, and mangoes, are reported in this bulletin.

## IDAHO STATION, Moscow, H. T. French, Director.

Indian Corn: Its Production and Improvement. By G. A. Crosthwait. (Bulletin No. 57, pp. 59, pls. 11.)

This bulletin deals with the general principles of corn culture, with particular reference to the improvement of corn with a view of increasing its production in Idaho.

Irrigation Investigations in Idaho in 1906. By E. Nelson. (Bulletin No. 58, pp. 46, fig. 1, map 1.)

The lines of work in irrigation reported in this bulletin include "soil moisture investigations; duty of water measurements; gathering of data on cost of preparing land for irrigation and methods and cost of applying water and producing crops; seepage investigations; and determination of amount of evaporation from a water surface."

A Soil Fertility Test. By G. A. Crosthwait. (Bulletin No. 59, pp. 16, figs. 5.)

The purpose of the tests reported in this bulletin was to ascertain whether or not any essential plant-food elements were insufficient in quantity, especially in soils devoted to the culture of wheat.

## ILLINOIS STATION, Urbana, E. Davenport, Director.

National Association of Dairy Instructors and Investigators. (Circular No. 111, pp. 59, figs. 2.)

This circular reports the organization, constitution, and proceedings of the above-named association, and includes papers with discussions on the following topics: The manufacture of condensed milk, by O. F. Hunziker; a plan for the registration of dairies leading to the improvement of market milk, by C. B. Lane; city milk supply, by J. M. Trueman; difference in efficiency of dairy cows, by W. J. Fraser; some hand separator problems, by C. H. Eckles; pasteurization of hand separator cream for making butter, by C. E. Lee; benefits to be derived from educational butter contests, by B. D. White; milking machines, by H. H. Dean; advantages of the organization of dairy instructors and investigators, by E. H. Webster; opportunities for research work in the manufacture of dairy products, by C. F. Doane; how shall we conduct feeding experiments with dairy cows? by B. E. Carmichael; dairy instruction, by H. E. Van Norman; soft-cheese problems, by C. Thom; reaching the farmer, by E. S. Guthrie; and testing dairy herds, by H. A. Hopper.

Control of Bitter Rot of Apples. By J. C. Blair. (Circular No. 112, pp. 13.)

This circular summarizes the results of five years' investigations on methods of controlling the bitter rot of apples, a detailed account of the work being given in Bulletin No. 117 of the station.

## IOWA STATION, Ames, C. F. Curtiss, Director.

Experiments in Swine Feeding. The Value of Corn and Supplementary Feeds for Pork Production. By W. J. Kennedy and E. T. Robbins. (Bulletin No. 91, pp. 61, figs. 23.)

The purpose of the tests reported in this bulletin were: (1) To compare with each other and with a ration of corn alone rations made up of corn with certain supplementary feeds richer in protein, such as barley, wheat shorts, meat meal, and tankage; (2) to compare rations composed of corn and varying proportions of these supplemental feeds; (3) to compare dry lot and pasture feeding of pigs; and (4) to compare timothy and clover pasture.

Tuberculosis in Swine. By W. J. Kennedy, E. T. Robbins, and F. W. Bouska. (Bulletin No. 92, pp. 24, figs. 2.)

The objects of the experiments reported in this bulletin were: (1) To test the effect of feeding to pigs skin milk known to contain virulent bacilli of bovine

tuberculosis; (2) to test the effect of feeding pasteurized skim milk to pigs; and (3) to determine whether there is any difference in the susceptibility of pigs fed tuberculous milk on pasture and in small dry yards.

Comparative Values of Alcohol and Gasoline for Light and Power. By J. B. Davidson and M. L. King. (Bulletin No. 93, pp. 24, figs. 8, dgms. 3.)

The experiments reported in this bulletin were undertaken "for the purpose of making a comparison between (1) the heat value of the fuels, (2) their economy in the production of light, (3) their economy in the production of power, and (4) the relative safety of alcohol and gasoline for general use."

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Indian Corn. By A. M. Ten Eyck and V. M. Shoesmith. (Bulletin No. 147, pp. 223-296+II, figs. 20.)

This bulletin gives the results of variety, culture, fertilizer, and rotation experiments with corn begun in most cases in 1903 and continued through the seasons of 1904, 1905, and 1906.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Second Report upon the Horseflies of Louisiana. By J. S. Hine. (Bulletin No. 93, pp. 59, figs. 37.)

The purpose of this bulletin is to give a systematic treatise of the species of horseflies found in Louisiana. It also includes descriptive notes of their breeding habits, life histories, and natural enemies.

MARYLAND STATION, College Park, H. J. Patterson, Director.

The Digestibility of Molasses Feeds. By H. J. Patterson and R. Outwater. (Bulletin No. 117, pp. 257-290.)

The results of digestion experiments with steers conducted at the station are reported in this bulletin.

Alfalfa in Maryland. By C. W. Nash. (Bulletin No. 118, pp. 291-314, figs. 7.)

This bulletin gives directions for the successful culture of alfalfa in Maryland, together with a summary of the experience of a large number of alfalfa growers in the State.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. XX+318, figs. 99.)

This contains the executive report of the director, reviewing the work of the station during the year, a financial statement to June 30, 1907, and reprints of Bulletins 110 to 118, inclusive, of the station.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 223, pp. 4.)

This is a summary for July, 1907.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

The Practical Use of Starters. By L. D. Bushnell and W. R. Wright. (Bulletin No. 246, pp. 139-151, figs. 7.)

This bulletin gives the results of the station's experience during the past four years in the use of starters, and the station presents this bulletin to the cheese and butter makers of the State as containing information of great practical value in these industries.



MISSOURI STATION, Columbia, H. J. Waters, Director.

The Winterkilling of Peach Buds as Influenced by Previous Treatment.  
By W. H. Chandler. (Bulletin No. 74, pp. 47, figs. 14.)

The purpose of this bulletin is "to discuss the effects of severe pruning and some other necessary treatment of the peach orchard on the hardiness of the fruit buds, and to give the results of some observations on the hardiness of different varieties."

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Thirteenth Annual Report, 1906. (Annual Report, 1906, pp. 99-184, figs. 3, dgm. 1.)

This report contains the usual financial, executive, and departmental reports of the station's work during the year.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Pig Feeding. By J. J. Vernon and J. M. Scott. (Bulletin No. 62, pp. 24, pls. 4, fig. 1.)

The purposes of the experiments reported in this bulletin were to determine the best proportion of alfalfa hay to corn to form a ration for feeding pigs and whether or not alfalfa hay alone forms a good and profitable ration.

Melon Culture. By F. Garcia. (Bulletin No. 63, pp. 38, figs. 11.)

This bulletin gives the methods and practices for growing watermelons and cantaloupes in New Mexico, including notes on the insects and diseases to which the plants are subject. Suggestions are also given as to methods of control.

Seventeenth Annual Report, 1906. (Annual Report, 1906, pp. 66.)

This contains the usual executive and departmental reports reviewing the work of the station during the year, and a financial statement to June 30, 1906.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

A Gasoline-heated Colony Brooder House. By J. E. Rice and R. C. Lawry. (Bulletin No. 246, pp. 137-176, figs. 19, dgms. 11.)

This bulletin contains a history of the development of the gasoline-heated colony brooder house designed and used by the New York State College of Agriculture with the advantages and disadvantages of its use. It is believed that this method of brooding eliminates at least three-fourths of the labor required to brood chickens.

The Importance of Nitrogen in the Growth of Plants. By T. F. Hunt. (Bulletin No. 247, pp. 175-203, figs. 3.)

The point of view expressed in this bulletin is "that on the majority of agricultural soils in the humid climate of eastern United States the water-soluble nitrogen is likely to be a limiting factor and that the effect of the various successful cultural methods is to increase the water-soluble nitrogen at the critical time in the plant's life history."

New Poultry Appliances. By J. E. Rice and R. C. Lawry. (Bulletin No. 248, pp. 205-228, figs. 32.)

This bulletin describes 13 poultry appliances originated and operated at the station—namely, a new trap nest, a nonwasting rat-proof feed hopper, a force-feed grit hopper, a feed supply can, an egg distributing table, an egg carrying box, a system for keeping laying records, a combination crate for eggs and dressed poultry, a sanitary water pan, a device for carrying kerosene oil to incubator cellar, a catching hook, a chick feed trough, a cover for water pan, and a removable floor for chicken shelter.



## OHIO STATION, Wooster, C. E. Thorne, Director.

The Selection of Seed Corn. By C. G. Williams. (Circular No. 71, pp. 8.)

The time and method of selecting seed corn upon the plant in the field, the care of seed corn, and the results of tests made at the station to show the advantage in increased production of seed selection are given in this circular.

## OKLAHOMA STATION, Stillwater, W. L. English, Director.

A Study of the Bacterial Content of Cream. By L. L. Lewis and W. R. Wright. (Bulletin No. 75, pp. 16, figs. 13.)

The results of tests made at the station to determine the quality of cream delivered at creameries with a view of improving the butter industry in the State are reported in this bulletin.

The Value of Gaseous Disinfectants. By L. L. Lewis and Maude English. (Circular No. 6, pp. 8.)

The results of tests made with chemical disinfectants of a gaseous form, such as would be necessary to use around a patient suffering from some infectious disease, are reported in this circular.

Sixteenth Annual Report, 1907. (Annual Report, 1907, pp. 64, fig. 1.)

This contains the report of the director, a summary of press bulletins issued during the year, data on the annual precipitation for Oklahoma and Indian Territory, and a financial statement to June 30, 1907.

## RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Analyses of Commercial Fertilizers. By B. L. Hartwell et al. (Bulletin No. 122, pp. 177-187.)

This bulletin contains analyses of such potato and vegetable fertilizers as had been licensed and found on sale in the State in the spring of 1907.

## SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Cotton-Seed Meal and Corn Silage as a Ration for Dairy Cows. By J. Michels and J. M. Burgess. (Bulletin No. 131, pp. 11.)

The results of experiments to determine whether cotton-seed hulls or cotton-seed meal is the chief cause of trouble in cattle arising from the feeding of these products for any length of time are reported in this bulletin.

## VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Fertilizers. Soil Biology in its Relation to Fertilization. By J. L. Hills and C. H. Jones. (Bulletin No. 130, pp. 153-294.)

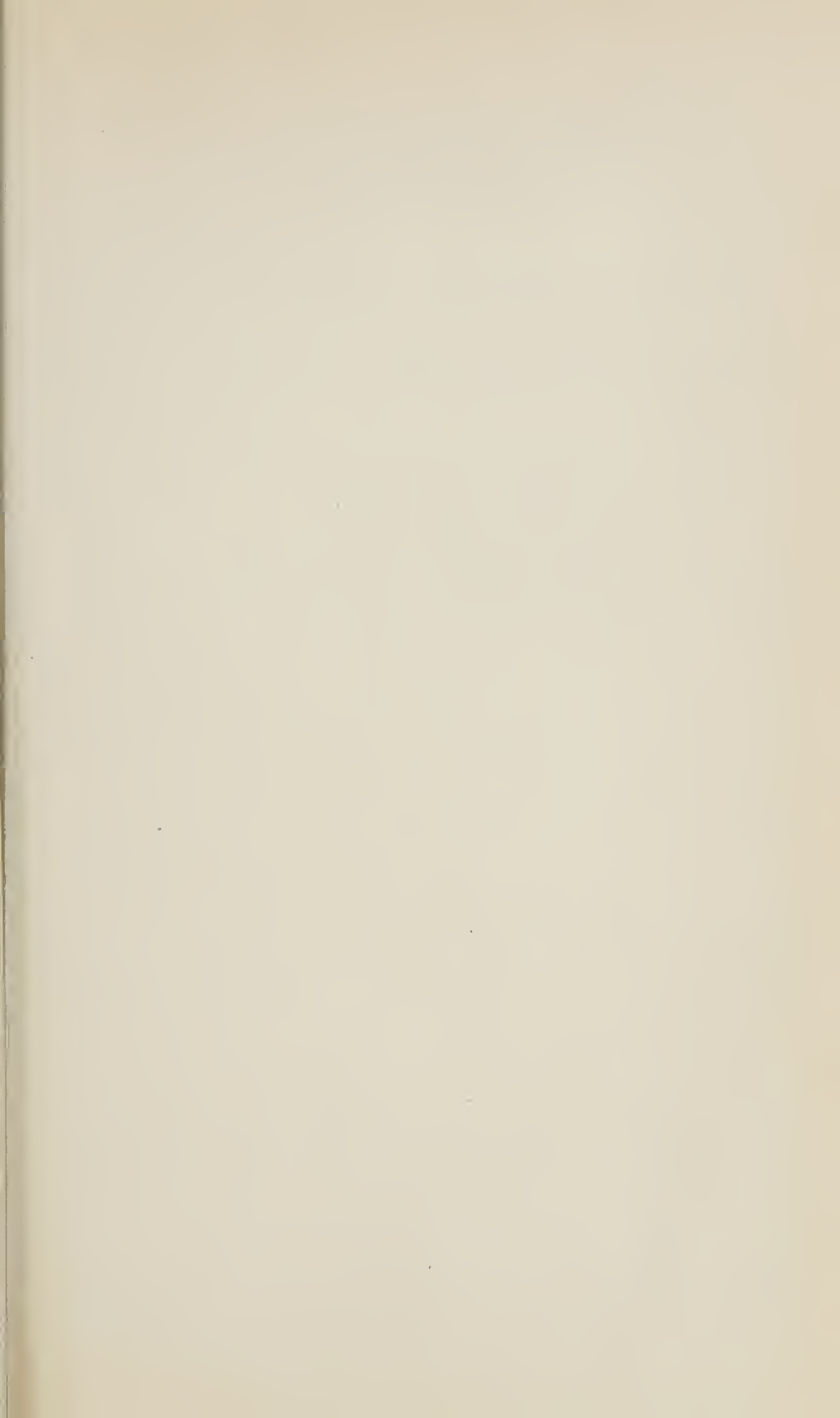
In addition to giving sections of the fertilizer law, the selling prices and valuations of fertilizers, a comparison of analyses for five years, and the results of fertilizer inspection in Vermont in 1907, this bulletin discusses in detail the topic of soil biology in its relation to fertilization.

## VIRGINIA STATION, Blacksburg, ———.

The Improvement of Fire-Cured Tobacco. By G. T. McNess, E. H. Mathewson, and B. G. Anderson. (Bulletin No. 166, pp. 186-234, figs. 8.)

This bulletin gives the results of experiments conducted by the station in cooperation with the Bureau of Soils of this Department. The purpose of the investigations was to determine if it were possible, by introducing more intensive methods of culture, better fertilization, and systematic rotation of crops, to improve the quality and yield of the heavy fire-cured type of tobacco so as to bring larger financial returns to growers.









# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING SEPTEMBER, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

#### CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Milking Machines. Part 1. Effect upon Quality of Milk. By W. A. Stocking, Jr., and C. J. Mason. Part 2. Effect upon Milk Yield. By C. L. Beach. (Bulletin No. 47, pp. 104–138, figs. 10.)

The purpose of the work reported in this bulletin “has been to determine the effect upon the germ content of the milk drawn by the machine compared with milk drawn by hand under the same conditions. At the same time, a study of the care necessary to keep the machines clean and in sterile condition has been made.”

Comparative Studies with Covered Milk Pails. By W. A. Stocking, Jr. (Bulletin No. 48, pp. 73–103, figs. 12.)

In this bulletin are reported the results of tests made with various styles of covered milk pails on the sanitary production of milk.

#### DELAWARE STATION, Newark, H. Hayward, Director.

The Effect of Desiccation on Root Tubercle Bacteria. By F. D. Chester. (Bulletin No. 78, pp. 15.)

The methods and results of experiments are reported.

Sixteenth, Seventeenth, and Eighteenth Annual Reports, 1904, 1905, and 1906. (Annual Reports, 1904, 1905, and 1906, pp. 115, pls. 2.)

This contains financial statements for the three years and reports by the department officers reviewing the results of the work for these years in their respective departments.

#### HAWAII STATION, Honolulu, J. G. Smith, Special Agent in Charge.

Sixth Annual Report, 1906. (Annual Report, 1906, pp. 88, pls. 7.)

This contains a summary of the station's investigations for the year by the special agent in charge and reports by the departmental officers. The following special articles are included: Organic nitrogen in Hawaiian soils, by E. C. Shorey, and the economic seaweeds of Hawaii and their food value, by Minnie Reed.

#### IOWA STATION, Ames, C. F. Curtiss, Director.

Alfalfa (*Medicago sativa*). By P. G. Holden. (Circular No. 1, pp. 4.)

Notes are given in this circular on the advantages and disadvantages of the culture of alfalfa in Iowa, with directions for preparing the land and for the culture of the crop.

KANSAS STATION, Manhattan, C. W. Burkett, Director.

Kansas Law Regulating the Sale of Concentrated Feeding Stuffs. By C. W. Burkett and J. T. Willard. (Bulletin No. 146, pp. 217-224.)

The text of the law is given and its provisions briefly discussed in this bulletin.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Bare Lot vs. Grass Lot in Relation to Stomachal and Intestinal Parasitism of Lambs. By W. H. Dalrymple. (Bulletin No. 95, pp. 23, pls. 5, figs. 2.)

This bulletin gives the details of further experiments with nodule disease, including also treatment directed against stomach worms. In both cases the purpose was to test "the difference in the results, if any, that might be secured with lambs raised on a grass lot, as against those kept on a bare lot, or one free from grass."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 224, pp. 4.)

This is a summary for August, 1907.

MICHIGAN STATION, Agricultural College, C. D. Smith, Director.

Dried Beet Pulp for Fattening Steers. By R. S. Shaw and H. W. Norton, Jr. (Bulletin No. 247, pp. 153-165.)

The results of three comparative tests made to determine the feeding values of dried beet pulp and corn meal for fattening steers are reported in this bulletin.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Report of Work at McNeill Branch Experiment Station for 1906. By E. B. Ferris. (Bulletin No. 101, pp. 20, figs. 4.)

A general review of the work, which includes notes on the culture of fruits, vegetables, and staple crops, the raising of live stock, and rotation experiments.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Economical Rations in Beef Production. By H. R. Smith. (Bulletin No. 100, pp. 44, figs. 12, dgm. 1.)

The experiments reported in this bulletin were conducted under ordinary farm conditions of the State, and were instituted for the purpose of demonstrating the greater possibility of cattle feeding when the physiological requirements of cattle are taken into consideration.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Annual Report, 1906. (Annual Report, 1906, pp. 31.)

This contains the director's report, which reviews the work and finances of the station, and reports by the heads of the various departments.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

The Tuna as a Food for Man. By R. F. Hare and D. Griffiths. (Bulletin No. 64, pp. 88, pls. 7, figs. 2.)

This bulletin gives the results of a study of the uses and chemical composition of the fruit of the prickly pear and the economic practices in the manufacture of tuna products by the primitive inhabitants of Mexico. The data reported form a foundation for work now in progress in the development of more desirable forms.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Potato Spraying Experiments in 1906. By F. C. Stewart et al. (Bulletin No. 290, pp. 235-321, pls. 2.)

The results of 80 separate experiments, which constitute the fifth year's work of the ten-year series of potato-spraying experiments being conducted by the station in cooperation with the farmers of the State, are reported in this bulletin.

Five Years of Potato Spraying. By F. H. Hall. (Bulletin No. 290, popular edition, pp. 12, fig. 1.)

A popular edition of the above bulletin.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Experiments with Indian Corn, Forage Crops, Leguminous Crops. By J. H. Shepperd and O. O. Churchill. (Bulletin No. 76, pp. 337-376.)

The results of variety and cultural tests for the years 1892 to 1905, inclusive, are reported in this bulletin.

Bovine Tuberculosis. By L. Van Es. (Bulletin No. 77, pp. 377-430, pls. 10.)

In addition to notes on the cause, symptoms, diagnosis, and treatment of tuberculosis in cattle, this bulletin discusses such topics as tuberculin and the tuberculin test, the relation of bovine to human tuberculosis, the eradication of bovine tuberculosis, and other matters relating to the economic importance of this disease. The bulletin also contains a bibliography, glossary of terms, and an appendix which gives directions for the disinfection of stables, pens, stock yards, harness, utensils, etc.

OHIO STATION, Wooster, C. E. Thorne, Director.

The Maintenance of Fertility. By C. E. Thorne. (Bulletin No. 182, pp. 131-198, pls. 3, figs. 2, dgms. 7.)

This bulletin gives the results to date of the investigations conducted by the station for a number of years on the maintenance of soil fertility, and includes descriptions of the soils under experiment at the station and test farms and notes on the investigations now in progress.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Winter Wheat Varieties. By J. H. Barron. (Bulletin No. 82, pp. 19, figs. 9.)

A summary of the results obtained at the station with varieties of winter wheat for a number of years, with particular reference to the results obtained in 1906 and 1907, are reported in this bulletin. The data as a whole are believed to indicate what varieties are best suited to the conditions in Pennsylvania.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Soil Tests in Paraffined Wire Baskets, Compared with Tests on Farms. By B. L. Hartwell and C. L. Cook. (Bulletin No. 120, pp. 109-138.)

The results of comparative tests with various crops conducted by the station in cooperation with the Bureau of Soils of this Department are reported in this bulletin.

A Study of Rhode Island Soil Requirements by Means of Field Tests. By G. E. Adams. (Bulletin No. 121, pp. 139-175.)

This bulletin contains the details of the field work conducted by the station with various crops in comparative soil tests in paraffined wire baskets and on farms, the work being cooperative with the Bureau of Soils of this Department and reported in Bulletin 120 of the station.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Breeding Hardy Strawberries. By N. E. Hansen and C. Haralson. (Bulletin No. 103, pp. 218-265, figs. 20.)

This bulletin gives notes on the origin and development of cultivated strawberries, presents a list of the varieties tested at the station, and reports the results of experiments in breeding hardy varieties in the State.

Raspberries, Blackberries, and Dewberries. By N. E. Hansen and C. Haralson. (Bulletin No. 104, pp. 266-297, figs. 15.)

This bulletin describes and illustrates the work of the station in the breeding of hardy varieties of raspberries for the Northwest, with brief notes on blackberries and dewberries.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

I. The Chemical Composition of Washington Forage Crops. II. Analyses of Grains and Concentrated Feeding Stuffs. By R. W. Thatcher. (Bulletin No. 82, pp. 32, figs. 2.)

Analyses of forage crops, grains, and feeding stuffs, and the text of the State feeding-stuffs law are reported in this bulletin.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Condimental Stock Foods. By F. W. Woll. (Bulletin No. 151, pp. 40, fig. 1.)

This bulletin sets forth the position of the station in regard to condimental stock foods on sale in the State, and reports the results of feeding experiments made at the station during the past year to determine the value of such preparations.

A Comparison of Aniline and Anatto Butter Colors in Butter Making. By E. H. Farrington and M. Meyers. (Bulletin No. 152, pp. 19, fig. 1.)

The experiments reported in this bulletin were made to determine whether butter colors now on the market impart an objectional flavor to the butter, and whether butter thus artificially colored holds its color when kept in cold storage.



# United States Department of Agriculture,

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A. C. TRUE, Director.

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#### CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Lining of Ditches and Reservoirs to Prevent Seepage Losses. By E. Mead and B. A. Etcheverry (Bulletin No. 188, pp. 383–420, figs. 15.)

This bulletin is a progress report of a year's investigations which were made by the California Station in cooperation with this Office to determine the relative merits and expense of using some cheap and valuable material or some process to prevent the loss of water by seepage in irrigation.

#### CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Lead Arsenate and Paris Green. By J. P. Street and W. E. Britton. (Bulletin No. 157, pp. 13.)

This bulletin gives the chemical composition of a number of samples of arsenate of lead and Paris green found on sale in the State, and gives directions for their use as insecticides.

#### GEORGIA STATION, Experiment, M. V. Calvin, Director.

Feeding Tennessee Steers in Georgia. The Outlook for Beef Production in Georgia. By C. L. Willoughby and P. N. Flint. (Bulletin No. 76, pp. 36, figs. 4.)

The results of experiments as carried out during the winter seasons of 1905–6 and 1906–7 to determine “whether there is any profit, and how much, in buying steers from near-by States and finishing them upon such feeds as are available on the average Georgia farm” are reported in this bulletin.

#### IOWA STATION, Ames, C. F. Curtiss, Director.

Experiments in Swine Feeding. By L. E. Carter. (Bulletin No. 91, popular edition, pp. 17.)

This is a popular edition of Bulletin 91 of the station, the tests reported having been made: (1) To compare with each other and with a ration of corn alone rations made up of corn with certain supplementary feeds richer in protein, such as barley, wheat shorts, meat meal, and tankage; (2) to compare rations composed of corn and varying proportions of these supplemental feeds; (3) to compare dry lot and pasture feeding of pigs; and (4) to compare timothy and clover pasture.

**Tuberculosis in Swine.** By L. E. Carter. (Bulletin No. 92, popular edition, pp. 11.)

This is a popular edition of Bulletin 92 of the station, the tests reported having been made: (1) To test the effect of feeding to pigs skim milk known to contain virulent bacilli of bovine tuberculosis; (2) to test the effect of feeding pasteurized skim milk to pigs; and (3) to determine whether there is any difference in the susceptibility of pigs fed tuberculous milk on pasture and in small dry yards.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

**Cotton Wilt.** By H. R. Fulton. (Bulletin No. 96, pp. 15, pls. 3.)

This bulletin discusses the character and distribution of this disease, and gives the best known methods of control with the degrees of success attending their use.

MARYLAND STATION, College Park, H. J. Patterson, Director.

**Greenhouse Pests of Maryland.** By A. B. Gahan. (Bulletin No. 119, pp. 36, figs. 8.)

In this bulletin the author has endeavored to bring together what is known of the life histories and economic treatment of the species of greenhouse pests occurring in Maryland, together with the results of personal observations and experiments.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

**Meteorological Observations.** By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 225, pp. 4.)

This is a summary for September, 1907.

MICHIGAN STATION, East Lansing, C. D. Smith, Director.

**Fertilizer Analyses.** By A. J. Patten. (Bulletin No. 248, pp. 16.)

Notes are given in this bulletin on the fertilizer law and the results of inspection in 1907, and analyses of 145 brands of fertilizers licensed for sale in the State are reported.

**Protection of Buildings from Lightning.** By A. R. Sawyer and L. J. Smith. (Bulletin No. 249, pp. 17-35, figs. 5.)

In this bulletin are given the "rules for the erection of lightning conductors, as issued by the lightning rod conference in 1882, with observations thereon by the lightning research committee, 1905," and the system of lightning protection used on the college barns, which was constructed with special attention to the needs of the average farmer in the State, is described.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

**Inspection and Analyses of Cotton-seed Meal on Sale in Mississippi.** By W. F. Hand et al. (Bulletin No. 104, pp. 25, fig. 1.)

Analyses of cotton-seed meal collected by the State chemist in the course of fertilizer inspection during the season of 1906-7, together with information concerning the important constituents of meal and the value of these as a source of food for both plants and animals.

MISSOURI STATION, Columbia, H. J. Waters, Director.

**Wintering Yearling Cattle.** By H. J. Waters. (Bulletin No. 75, pp. 53.)

In discussing the results of investigations on the wintering of yearling cattle, this bulletin discusses the following topics: "(1) Comparison of different coarse fodders when fed alone, and when combined with a limited grain ration; (2) influence of winter gains upon following summer gains at pasture, and (3) efficiency of rations as affected by the season."

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Practical Bee Keeping. By R. Benton and R. A. Cooley. (Bulletin No. 67, pp. 75, pls. 5, figs. 15.)

This bulletin is designed for the use of the beginner and small apiarist in Montana and, in addition to being a popular treatment of the whole subject of bee keeping, is a detailed statement of investigations made at the station. The following topics are discussed: Structure of the honeybee, some habits of the bees, varieties of bees and their geographical distribution, bees and flowers—honey-producing plants, essentials of a good beehive, technique of handling bees, starting an apiary, modes of wintering, queen rearing, methods of controlling increase, production of honey, and bee diseases.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses of Paris Green. By C. S. Cathcart. (Bulletin No. 205, pp. 9.)

"This bulletin presents the work of the station in its second examination of Paris green sold in the State under the law of April 9, 1906."

Analyses and Valuations of Commercial Fertilizers. Analyses of Fertilizer Supplies, Home Mixtures, and Special Compounds. By C. S. Cathcart, J. W. Kellogg, and V. J. Carberry. (Bulletin No. 206, pp. 35.)

This bulletin gives the results of fertilizer inspection in 1907, including analyses and valuations of 261 brands, together with 114 samples of fertilizer supplies, 9 home mixtures, and 22 special compounds.

Twenty-seventh Annual Report, 1906. (Annual Report, 1906, pp. XXII+670, pls. 80, figs. 19.)

This contains summary accounts of work and expenditures of the station during the year and detailed reports of the department officers. Among the topics discussed are the following: Fertilizers and feeding stuffs inspection, the carbohydrates of sugar-beet pulp, buckwheat products, investigations relative to the use of nitrogenous materials, plant nutrition studies, chemical and bacteriological factors in the ammonification of soil nitrogen, experiments with orchard fruits, small fruits, and vegetables, experiments in growing forage crops, cost of producing milk, experimental studies in oyster propagation, egg production of virgin fowls, an application of von Behring's method of combating bovine tuberculosis, experiments with varieties and crosses of various vegetables, notes on the insects prevalent during the year, with methods of control, and report on the mosquito investigations in 1906.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Codling Moth Investigations during 1903 and 1904. By F. Garcia. (Bulletin No. 65, pp. 29, dgms. 3.)

Notes are given in this bulletin on the life history and habits of the codling moth, with a detailed account of records made at the station during the years 1903 and 1904 to determine the number of broods, the appearance of the maximum, and the overlapping of the broods.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Inspection of Feeding Stuffs. (Bulletin No. 291, pp. 321-369.)

"This bulletin gives the results of the analyses of samples of feeding stuffs collected by the commissioner of agriculture during the fall of 1906 and winter of 1906-7, and by him transmitted for analysis to the director of the New York Agricultural Experiment Station."

Effect of Treating Milk with Carbon-dioxid Gas under Pressure. By L. L. Van Slyke and A. W. Bosworth. (Bulletin No. 292, pp. 371-384, pls. 3.)

The results of a series of experiments to ascertain the effect of carbon dioxide under different pressures upon the development of lactic acid in milk and upon the keeping quality of the milk are reported in this bulletin.



## OHIO STATION, Wooster, C. E. Thorne, Director.

Strawberries: The Newer Varieties. By F. H. Ballou. (Bulletin No. 186, pp. 10, figs. 23.)

This bulletin discusses the results of variety tests with strawberries, and gives notes and illustrations of the newer varieties which fruited for the first time during the season of 1907.

Celery Root Rot. By J. M. Van Hook. (Circular No. 72, pp. 6, figs. 3.)

This circular describes the effects of a root rot of celery which made its appearance in Ohio in 1902, gives the causes of the disease, and suggests methods for its prevention.

Tankage for Hogs in Cattle Feed Lots. By B. E. Carmichael. (Circular No. 73, pp. 4.)

The tests reported in this circular were made in conjunction with a steer feeding experiment for the purpose of determining whether or not the practice of fattening hogs by allowing them to follow steers can be improved by supplying a feed comparatively rich in protein and ash. "The results of the preliminary work in this direction have been very striking and are presented in this circular."

## OKLAHOMA STATION, Stillwater, W. L. English, Director.

The Value of Cotton Improvement. (Circular No. 7, pp. 4.)

Notes are given in this circular on the value of breeding as a means of cotton improvement, the advantages of planting early varieties, and the necessity of improving cultural conditions in Oklahoma.

## SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Analyses of Commercial Fertilizers. By M. B. Hardin. (Bulletin No. 126, pp. 40.)

This bulletin contains analyses of 743 samples of fertilizers collected during the season of 1906-7, and, with the exception of 50 of the latest, which are included in this general bulletin, were published in 22 weekly bulletins issued and distributed during the year.

## UTAH STATION, Logan, E. D. Ball, Director.

Arid Farming Investigations. By W. M. Jardine. (Bulletin No. 100, pp. 127-157, figs. 2.)

The investigations on arid farming are in continuation of the work outlined in Bulletin 91 of the station. The results with fall and spring wheat, oats, barley, corn, alfalfa, grasses, rye, emmer, and miscellaneous crops are given in this bulletin, including notes on depth of plowing, time and rate of seeding, continuous cropping *vs.* fallowing, cost of production, etc.

## VERMONT STATION, Burlington, J. L. Hills, Director.

Commercial Feeding Stuffs. By J. L. Hills and C. H. Jones. (Bulletin No. 131, pp. 8, figs. 2.)

The results of fertilizer inspection in the spring of 1907, including the analysis of samples, are reported in this bulletin. The cotton-seed meal situation and weed seeds in feeds are topics specially discussed.

## VIRGINIA STATION, Blacksburg, ———.

Corn and Various Amendments as Food for Hogs. By A. M. Soule, J. R. Fain, and M. P. Jarnagin. (Bulletin No. 167, pp. 235-257, figs. 5.)

The results of feeding experiments conducted at the station to determine the best methods of maintaining and fattening hogs in winter are reported in this bulletin.



Experiments with Oats, Millet, and Various Legumes. By A. M. Soule and P. O. Vanatter. (Bulletin No. 168, pp. 259-290, figs. 12.)

This bulletin gives the results of culture and variety tests at the station with oats, vetch, millet, cowpeas, soy beans, field beans, and Canada field peas.

Protein Requirements for Dairy Cows. By A. M. Soule, J. R. Fain, and M. P. Jarnagin. (Bulletin No. 169, pp. 291-313, figs. 9.)

The results of feeding experiments with dairy cows to determine the minimum amount of protein required to maintain maximum yields of milk and butter and preserve the health of the cows are reported in this bulletin. Among the topics discussed are: Character and cost of foods, influence of rations on live weight, food consumption in relation to yield, economy of milk and butter production, influence of rations on yield, etc.

WYOMING STATION, Laramie, J. D. Towar, Director.

Ration Experiments with Swine. By G. E. Morton. (Bulletin No. 74, pp. 18, figs. 3.)

This bulletin discusses the best methods of raising and feeding swine in the Rocky Mountain region and gives the results of feeding experiments "to demonstrate whether in this State small grains may sometimes be used with profit to replace corn-belt rations, and to discover whether alfalfa hay is a satisfactory ration for swine, and if so, how, and in what quantities it should be fed."

The Life and Preservation of Pitch Pine Fence Posts. By B. C. Buffum. (Bulletin No. 75, pp. 18, figs. 7.)

The results of tests begun at the station 16 years ago on the life and preservation of fence posts are reported in this bulletin.

Seventeenth Annual Report, 1907. (Annual Report, 1907, pp. 143, figs. 10, dgms. 10.)

This contains the director's report, a financial statement, and departmental reports on the work of the station during the year.



# United States Department of Agriculture,

## OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

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### LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING NOVEMBER, 1907.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Texas or Tick Fever. By C. A. Cary. (Bulletin No. 141, pp. 107–186, figs. 9.)

This bulletin gives notes on the history of tick fever, the life history of cattle ticks, the symptoms and diagnosis of tick fever, methods of inoculation, care of cattle after inoculation, and methods of eradicating cattle ticks.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Cement Pipe for Small Irrigating Systems and Other Purposes. By G. E. P. Smith. (Bulletin No. 55, pp. 163–184, figs. 5.)

This bulletin calls attention to the wasteful use of water in irrigation in Arizona, and gives the results of experimental work in the manufacture, cost, and laying of cement pipe for the conservation of water supplies in irrigation. Notes are also given on other uses of cement pipe, such as for sewers, culverts, drains, etc.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Commercial Fertilizers. By J. S. Burd. (Bulletin No. 189, pp. 421–443.)

“This bulletin gives the results of the inspection and analyses of the various brands found on the market during the half year ended June 30, 1907.”

The Brown Rot of the Lemon. By R. E. Smith et al. (Bulletin No. 190, pp. 72, pl. 1, figs. 29.)

This bulletin gives notes on the methods of growing and handling lemons, and a detailed account of investigations on the nature, occurrence, and means of control of the brown rot. The biology of the fungus causing the disease is described and illustrated.

California Peach Blight. By R. E. Smith et al. (Bulletin No. 191, pp. 71–100, figs. 16.)

This bulletin “aims to present the results of three years’ experience and experimentation in the control of this trouble, showing the almost absolute success with which the disease has been controlled by treatment.”

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

The Howard Scale. By E. P. Taylor. (Bulletin No. 120, pp. 19, pls. 2, figs. 2.)

This bulletin gives notes on the discovery of the Howard scale (*Aspidiotus howardi*) in Colorado, its food plants, nature of damage caused by the insect, its description and life history, the means of distribution, natural enemies, and remedies used in combating this pest. A bibliography is appended.

Colorado Fodders. By W. P. Headden. (Bulletin No. 124, pp. 105.)

This bulletin is a study of the relative chemical and fattening values of the hay of fodder plants grown or found in the State. Chemical analyses and the coefficients of digestibility as determined by experiments are tabulated and discussed in detail.

Colorado Fodders. By W. P. Headden. (Bulletin No. 125, pp. 12.)

A summarized statement of Bulletin 124 of the station.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Report on Commercial Fertilizers, 1907. By E. H. Jenkins and J. P. Street. (Biennial Report, 1907-8, Part I, pp. 120.)

This report discusses the duties of manufacturers and dealers under the provisions of the State fertilizer law, gives the results of inspection, and reports analyses and valuations of 652 samples of commercial fertilizers and manurial waste products collected in 1907.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Petroleum Emulsion for the San José Scale. By C. D. Jarvis. (Bulletin No. 49, pp. 12.)

"The purpose of this bulletin is to call the fruit grower's attention to a simple method of preparing a petroleum emulsion or 'soluble oil' which, after one year's observation, shows signs of becoming an effective remedy for San José scale."

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Annual Report, 1907. (Annual Report, 1907, pp. 62+VIII, pls. 9, figs. 3.)

This contains the usual financial statement and reports by the director and heads of departments, reviewing the principal lines of work for the year ended June 30, 1907.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Plant Maladies and Their Control. By H. N. Starnes and J. F. Monroe. (Circular No. 62, pp. 18, figs. 4.)

This circular presents in condensed form information regarding the principal insects and fungus diseases affecting the fruit and truck crops of Georgia and surrounding territory, including notes on their means of control.

Fruits for Georgia. By H. N. Starnes and J. F. Monroe. (Circular No. 64, pp. 8, maps 2.)

A list of orchard and small fruits adapted to the different sections of the State are presented in this circular.

HAWAII STATION, Honolulu, J. G. Smith, Special Agent in Charge.

Cultivation of Tobacco in Hawaii. By J. G. Smith and C. R. Blacow. (Bulletin No. 15, pp. 29, pls. 3, figs. 4.)

This bulletin embodies the results of three years' work in the culture of tobacco in Hawaii for the purpose of demonstrating the possibility of the production of this crop on a commercial scale.



## ILLINOIS STATION, Urbana, E. Davenport, Director.

On the Life History, Habits, and Economic Relations of the White Grubs and May Beetles. By S. A. Forbes. (Bulletin No. 116, pp. 445-480, dgm. 1.)

The results of investigations are reported in this bulletin, including preventive and remedial measures.

Bitter Rot of Apples—Horticultural Investigations. By J. C. Blair. (Bulletin No. 117, pp. 481-551, figs. 2, dgms. 12.)

The experiments reported cover detailed investigations by the horticultural department of the station for five years on the bitter rot of apples. The plan of the work as outlined in the bulletin is as follows: "The experiments of each year are first described separately and a summary of the conclusions reached and points unanswered at the close of each year follow the detailing of the results, after which are given a general summary of the results of the entire five years' investigations, a series of conclusions in brief form, and a series of recommendations for the control of the disease."

Bitter Rot of Apples—Botanical Investigations. By T. J. Burrill. (Bulletin No. 118, pp. 553-608, figs. 19.)

This bulletin gives the botanical investigations on the bitter rot of apples, and forms that branch of the work not reported in Bulletin 117 of the station. The bulletin gives general information on the fungus (*Glomerella rufomaculans*) which causes the disease, and a detailed account of the special botanical investigations on the nature, spread, biology, and control of the disease.

Maple Spring Dairy. By W. J. Fraser. (Circular No. 113, pp. 16, figs. 11.)

This circular reports the improvement wrought by applying true principles of dairying in actual farm practice, and shows what can be done by a little cooperation between the agricultural experiment station and the farmer in increasing the quantity and quality of dairy products.

## KANSAS STATION, Manhattan, C. W. Burkett, Director.

Kansas Law Regulating the Sale of Commercial Fertilizers. By C. W. Burkett and J. T. Willard. (Bulletin No. 148, pp. 9.)

The text of the law is given and briefly discussed.

Prevention of Sorghum and Kafir Corn Smut. By H. F. Roberts and G. F. Freeman. (Bulletin No. 149, pp. 9-15.)

The results of experiments conducted at the station with formaldehyde in 1906 are reported in this bulletin.

## LOUISIANA STATION, Baton Rouge, W. R. Dodson, Director.

Analyses of Commercial Fertilizers and Paris Green. By J. E. Halligan et al. (Bulletin No. 97, pp. 117.)

This bulletin gives the analyses and valuation of 4,161 samples of miscellaneous fertilizers and 214 samples of Paris green made at the station during the year 1906-7.

## MAINE STATION, Orono, C. D. Woods, Director.

Food Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 145, pp. 185-202.)

"This bulletin contains the report upon samples of maple sugar and maple sirup collected by the inspector in the spring of 1907."

Fertilizer Inspection. By C. D. Woods and J. M. Bartlett. (Bulletin No. 146, pp. 203-234.)

"This bulletin contains the analyses of samples collected by the station of the brands of fertilizers licensed in 1907."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 226, pp. 4.)

This is a summary for October, 1907.

Index to Bulletins and Reports, 1888-1907. (Index Bulletin, pp. 48.)

This is a complete index of the publications of the Hatch Experiment Stations for the years 1888 to 1907.

MICHIGAN STATION, East Lansing, C. D. Smith, Director.

Pollination of Forced Tomatoes. By S. W. Fletcher and O. I. Gregg. (Special Bulletin No. 39, pp. 10, figs. 7.)

"The objects of these experiments were to determine the extent to which the irregularity and small size of some greenhouse tomatoes are due to imperfect pollination, and also to ascertain whether there is any benefit to be derived from the cross-pollination of varieties as compared with self-pollination."

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

How to Control Injurious Insects and Noxious Plant Diseases. By G. W. Herrick. (Bulletin No. 102, pp. 14, figs. 3.)

Directions for the preparation and use of a few of the leading insecticides and fungicides are given in this bulletin.

Corn Improvement in Mississippi. By W. R. Perkins. (Bulletin No. 103, pp. 16, figs. 8.)

This bulletin on corn-growing contests, corn judging, and corn breeding is published with the view of encouraging the farmers of the State in the improvement of corn.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Dairy Herd Record for Ten Years. Cost of Butter Fat Production. By A. L. Haecker. (Bulletin No. 101, pp. 40, figs. 8.)

Tabulated data on these topics are reported and discussed in detail.

The Effect of Bleaching upon the Quality of Wheat Flour. By F. J. Alway. (Bulletin No. 102, pp. 56.)

"The investigation, the results of which are given in this bulletin, \* \* \* was undertaken in order to determine the effect of bleaching upon the wholesomeness and upon the bread-making qualities of different flours."

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Carbonated Milk. By F. H. Hall. (Bulletin No. 292, popular edition, pp. 4, fig. 1.)

This is a popular edition of Bulletin 292, summarizing the results of experiments to ascertain the effect of carbon dioxide under different pressures upon the development of lactic acid in milk and upon the keeping quality of the milk.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Farm Poultry. (Bulletin No. 195, pp. 35, figs. 26.)

This bulletin gives information regarding the housing, feeding, and management of poultry at the station. A report is also made of the work in pedigree breeding for egg production, a test of the value of green feed, and the comparative keeping quality of fertile and infertile eggs.

Some Apple Diseases. By F. L. Stevens and J. G. Hall. (Bulletin No. 196, pp. 37-55, figs. 19.)

"Several apple diseases, part of them not heretofore recognized, are described in this bulletin. They consist of two fruit rots, two twig blights, and a bark disease which is called the scurf."

OHIO STATION, Wooster, C. E. Thorne, Director.

Cooperative Forestry Work, for 1908. By W. J. Green and L. H. Goddard. (Circular No. 74, pp. 3.)

This is a circular of inquiry seeking to enlist the farmers of the State in cooperative forestry work with the station.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Methods of Steer Feeding. By T. I. Mairs. (Bulletin No. 83, pp. 16, figs. 3.)

This bulletin discusses: (1) Corn stover *v.* corn silage for fattening steers; (2) the relative economy of barn and shed as shelter for fattening steers, and (3) cotton-seed meal *v.* Ajax flakes for fattening steers.

TEXAS STATION, College Station, H. H. Harrington, Director.

The Sweet Potato Borer. By A. F. Conradi. (Bulletin No. 93, pp. 16, figs. 5, map 1.)

In addition to statistical data on sweet potato production in the United States, this bulletin gives the area of infestation by the sweet potato weevil (*Cylas formicarius*), historical notes on its introduction into the United States, and descriptive and life history notes of this pest, including methods of repression.

Horticultural Survey of Gulf Coast. By E. C. Green. (Bulletin No. 94, pp. 21, figs. 8.)

The growth and development in farming and truck growing in the Gulf Coast region of Texas are reported, including data on the yields and varieties of crops grown, methods of culture, rotation, irrigation, harvesting, etc., practiced in the region.

Information Regarding the New Feed Law. By J. W. Carson and G. S. Fraps. (Bulletin No. 95, pp. 24.)

"This bulletin sets forth and explains the provisions of the act now regulating the sale of feed stuffs in the State of Texas, and gives the composition of some feeding stuffs on the Texas market."

Commercial Fertilizers and Poisonous Insecticides in 1906-7. By G. S. Fraps. (Bulletin No. 96, pp. 24.)

Analyses and valuations of commercial fertilizers on sale in the State during the season of 1906-7 are reported, and notes are given on a variety of topics relating to fertilizers and insecticides, such as fertilizers for certain crops, fertilizer recipes, home mixtures, etc.

Kafir Corn and Milo Maize for Fattening Cattle. By F. R. Marshall and J. C. Burns. (Bulletin No. 97, pp. 20, figs. 3.)

This is a progress report of experiments to determine the feeding value of Kafir corn and milo maize and on the best kinds of feeds to combine with them for finishing cattle for market.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Goat Industry in Western Washington. By D. A. Brodie. (Bulletin No. 78, pp. 24, figs. 5.)

The economic importance of the introduction of Angora goats into the State, especially for the purpose of clearing brush lands for pasture and other agricultural uses, is outlined in this bulletin. Directions for the care of the goats are also given.

Steer Feeding under Eastern Washington Conditions. By E. E. Elliott and W. A. Linklater. (Bulletin No. 79, pp. 20, figs. 5.)

This bulletin gives the results of inquiries among cattle feeders and dealers in Washington and other States for the purpose of determining whether the feeding of cattle for the winter markets offers a profitable opening for eastern Washington farmers.

Growing Alfalfa without Irrigation in Washington. By E. E. Elliott. (Bulletin No. 80, pp. 32.)

"It is the purpose of this bulletin to present in popular form the results of practical experiments carried out on the station farm, together with additional information gleaned by observation of the practices of some of our most progressive farmers, many of these trials having been undertaken on the suggestion and conducted with the advice of the station."

The Codling Moth in Eastern Washington. By A. L. Melander and E. L. Jenne. (Bulletin No. 81, pp. 24, figs. 7.)

This bulletin reports the results of tests of different brands of arsenate of lead on sale in the State, and the practical effects of the application of this insecticide in the control of the codling moth in various districts of eastern Washington.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Feeding Grain to Milch Cows at Pasture, By J. H. Stewart and H. Atwood. (Bulletin No. 109, pp. 15, fig. 1.)

The results of tests made to determine the profitableness of feeding grains and soiling crops to cows as supplemental feeds to pasturage during the summer period are reported in this bulletin.



# United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

## LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING DECEMBER, 1907.

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CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

The Relation of Certain Biological Principles to Plant Breeding. By E. M. East. (Bulletin No. 158, pp. 93, figs. 5.)

This bulletin gives "a short outline of the current belief in the most important theories and principles of variation, evolution, and heredity, with their practical application to methods of breeding farm crops, which it is hoped will give the farmer an idea of the scope and present state of the problems."

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Dehorning Cattle. By C. L. Willoughby. (Circular No. 63, pp. 12, figs. 3.)

This circular gives a few suggestions on the methods of dehorning cows. Notes are included on the treatment of dehorning wounds and on the time for dehorning.

INDIANA STATION, Lafayette, A. Goss, Director.

Beef Production. By J. H. Skinner and W. A. Cochel. (Circular No. 8, pp. 8.)

This circular points out the advantages and disadvantages of purchasing cattle in local and distant markets for the purpose of finishing the stock for the market.

Commercial Fruit Growing. By J. Troop and C. G. Woodbury. (Circular No. 9, pp. 11, figs. 6.)

This circular discusses some of the possibilities of financial success in commercial horticulture in Indiana and points out some of the fundamentals of profitable fruit growing.

The Use of Fertilizers on Southern Indiana Soils. By A. Goss. (Circular No. 10, pp. 16, figs. 3.)

This circular gives the results of investigations made at the station for a number of years with a view of ascertaining methods of fertilization best adapted to the different soils and crops of the State.

MAINE STATION, Orono, C. D. Woods, Director.

The Potato Plant Louse. By Edith M. Patch. (Bulletin No. 147, pp. 233-257, figs. 4.)

"This bulletin contains an account of the potato plant louse which has infested Maine potato fields [during] the past few years."

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and T. A. Barry. (Meteorological Bulletin No. 227, pp. 4.)

This is a summary for November, 1907.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Analyses of Miscellaneous Materials. By L. L. Van Slyke. (Bulletin No. 293, pp. 385-395.)

This bulletin includes analyses of a great variety of materials sent in to the station from time to time. Representative cases have been selected for publication, which include ashes, dried blood, nitrate of soda, meat meal and tankage, potash salts, muck soils, the fertilizer constituents of miscellaneous materials, constituents of miscellaneous feeding stuffs, molasses refuse, commercial gruels, poultry foods, maple sugar, home-made vinegar, and dried apples.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Poultry Experiments. Care and Management of the Flock. By J. H. Shepperd and O. W. Dynes. (Bulletin No. 78, pp. 433-474, figs. 13.)

This is a popular bulletin dealing with the general phases of poultry raising, and was prepared "with a view to helping the poultry men of the State to give their fowls more intelligent care as well as to make preliminary reports upon the trials which have been instituted."

OHIO STATION, Wooster, C. E. Thorne, Director.

The Maintenance of Fertility. (Bulletin No. 183, pp. 195-232, figs. 3, diags. 2.)

The results of investigations conducted in the field, in the stable, and in the chemical laboratory concerning the maintenance of soil fertility are reported in this bulletin. The topics discussed relate to the production, the reenforcement, and the value of manure.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

The Fruiting Habit of the Grape. By C. A. Keffer. (Bulletin Vol. XIX, No. 3, pp. 37-46, figs. 5.)

The results of an investigation into the fruiting habit of the Concord, Niagara, Delaware, and Brighton varieties of grapes are reported in this bulletin.

The Soils of Tennessee: Their Chemical Composition and Fertilizer Requirements. By C. A. Mooers. (Bulletin Vol. XIX, No. 4, pp. 49-90, map 1.)

In this bulletin are presented the chemical analyses and other data regarding certain Tennessee soils which have been obtained since the publication of Bulletin Vol. X, No. 3, and such conclusions are drawn and recommendations are made as the results seem to warrant.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Some Important Plant Diseases of Washington. By W. H. Lawrence. (Bulletin No. 83, pp. 56, figs. 17.)

"It is the purpose of this bulletin to give the necessary information concerning some of the more important diseases which will enable any person to combat them by the best known methods."

WISCONSIN STATION, Madison, H. L. Russell, Director.

A Creamery Method for the Determination of Water in Butter. By E. H. Farrington. (Bulletin No. 154, pp. 19, figs. 4.)

This bulletin gives the results of tests in methods of butter making which were made for the purpose of securing information of practical application by the butter makers of the State for determining, under ordinary dairy conditions, the percentage of water in samples of butter.

WYOMING STATION, Laramie, J. D. Towar, Director.

Index Bulletin D. By Grace R. Hebard. (Index Bulletin D, pp. 38.)

This includes bulletins 54 to 75 and the thirteenth to seventeenth annual reports of the station.





